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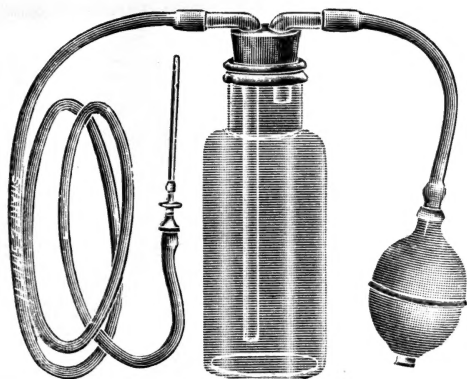
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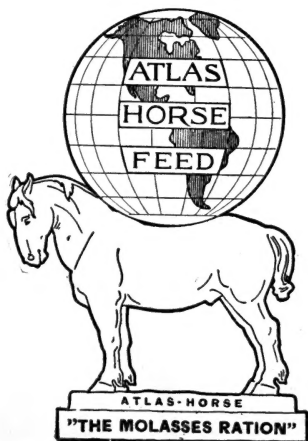
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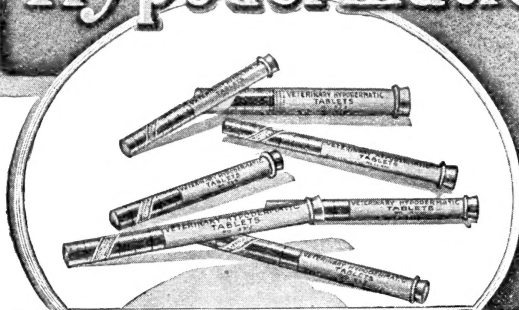
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# AMERICAN VETERINARY REVIEW

EDITED BY

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**VOLUME XXXV.**

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# AMERICAN VETERINARY REVIEW.

APRIL, 1909.

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## EDITORIAL.

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### EUROPEAN CHRONICLES.

PARIS, Feb. 15, 1909.

Although it is already three months since the worthy Secretary of the American Veterinary Medical Association has sent me the circular he has issued relating to the next meeting of the Association at Chicago, I regret to have been unable to notice it in our pages before this. In the body of the circular Dr. Lyman urges not only the necessity for the presence of a great number of our colleagues at Chicago to the convention which will be held during the four days beginning Tuesday, September 14, 1909,\* but calls also earnestly for new applications for membership. If there are over 4,000 eligible veterinarians practising in the U. S. and Canada it is obviously curious that only 900 of them are members of an association which is soon going to be able to celebrate her 50th anniversary. It is to be hoped that the recommendation of the secretary will find good responses and that the candidates shall surpass in number those of the preceding years. The circular concludes with the offering of the following resolutions adopted by the Association which will be arranged in pamphlet form for the members.

*First, concerning the reliability and efficiency of the Tuberculin Test—Resolved, That the experience which has been accumulated in great amount since the discovery of tuberculin*

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\* Date changed to September 7, 8, 9 and 10, 1909.

shows conclusively, and now more clearly than ever before, that it affords an accurate and reliable means for diagnosing tuberculosis in cattle. The percentage of errors from the use of tuberculin when properly applied is so small as to be of no moment when compared with the vast benefits that accrue from its proper use. While the tuberculin test is not infallible, as nothing in medicine or life is infallible, nevertheless, it affords incomparably the most perfect means available for the diagnosis of tuberculosis in the live animal.

Second, referring to the Standard of the Milk Bacteriological Count—Resolved, That the American Veterinary Medical Association approves the recommendation of the Committee of the Laboratory Section of the American Public Health Association on Methods and Standards of Bacterial and Microscopic Examination of Milk.

Third, the most desirable method of dealing with tuberculous animals—Resolved, That we approve the following as general standards of procedure in dealing with condemned tuberculous cattle: (a) There should be partial and perhaps decreasing indemnity to owners. (b) Indemnity should be limited to cattle previously owned in a state for a suitable period. (c) Killing should be done under competent official inspection. (d) Passed carcasses should be utilized as fat for human food. (e) Provision should be made for the most economical use of the condemned carcasses. Owners should be always given the option of the Bang Method of dealing with tuberculous cattle.

There is an unfortunate condition, however, in that date of the Chicago meeting, 14th of September. It is that it corresponds exactly with the date of the 9th *International Veterinary Congress*, which is to be held at The Hague between the 13th and 19th of September, and to which so many American veterinarians are somewhat bound to attend by being members of the National Committee for the United States, organized by my friend Prof. Leonard Pearson. I merely mention this, as the circumstances may have escaped the attention of the interested

parties. There are in the National Committee names that would represent well for the United States at The Hague, but that it would be regrettable not to see in Chicago. Among the visitors of the European veterinarians who visited America last year and were at Philadelphia and Washington, Americans have made friends. Would it not be good for the American profession to have a large delegation so as to permit the colleagues of the old world to appreciate and learn to know better and more intimately their brethren of the new?

\* \* \*

GERM CARRIERS AND TYPHOID FEVER.—I had just been looking again over the little circular 118 of the B. A. I. where the work of Doctor E. C. Schroeder, the Superintendent of the Experiment Station of the Department of Agriculture is recorded. "The unsuspected but dangerous tuberculous cows;" where it is said "that we are forced to assume for practical purposes that every tuberculous cow is dangerous from the moment she is known to be affected. We know that if she is not immediately dangerous she will rarely fail to become so, first intermittently, expelling tubercle bacilli occasionally and then continuously . . . The dangerously tuberculous cow from the provisional point of view is an animal that is expelling tubercle bacilli from the body, either with her milk, urine, fæces, saliva or otherwise, in such numbers and with such frequency that their presence can be certainly detected. The examination made at the Experiment Station shows that the commonest way in which tubercle bacilli pass from the body of a tuberculous cow is with the fæces . . ." And then I had glanced to the illustrations which represented seven cows, and read their concise history. All were in apparent excellent health. Their condition might be called excellent; some had fully developed udders, but they still were affected with tuberculosis for various lengths of time; and in all, tubercle bacilli were found in various quantities in their fæces and were passed by the animals, thus spreading means of possible infection at large. Then the *Presse*

*Médicale* came to pay me its semi-weekly visit and in it I found almost the very continuation of the article of Doctor Shroeder that I had been reading, almost the same question; subject for comparative pathology question.

The article was headed "Germ Carriers and Typhoid Fever" (*Porteurs de germes et fièvre typhoïde*). The existence of germ carriers and distributors of Eberth bacilli is now accepted, but one point seems yet to remain doubtful, viz: the importance that they have to the point of view of contagion of typhoid fever. According to some German statistics, out of 6,700 typhics examinations made in three years 310 continued to pass Eberth bacilli for more than 10 weeks after their recovery. Of these some kept their condition for three months, others remained so permanently. These 310 subjects gave the disease to 276 cases. Conclusions: The bacilli that germ carriers transport and distribute round them are virulent. Women form the greatest number of the carriers of Eberth bacilli and are extremely dangerous, specially those that are servants and employed as cooks. There are instances where infection has taken place from eating food prepared by persons who cared sick people or by others that had recovered but were carriers of microbes.

\* \* \*

The history recorded by Doctor Soper at the Biological Society of Washington, says Doctor Debre, where a chronic typhoid germ distributor is related is worth reproducing. Soper went to Oyster Bay to visit a family where six persons were affected with typhoid fever. Searchings for the causes of the contamination were made thoroughly; and in all, milk, cream, water, vegetables, fruits, etc., etc., the results were negative. It was found, however, that the first case had occurred ten days after engaging a new cook. Further inquiry about her revealed the fact that during ten years she had worked in eight families, and that in every one from ten days to several weeks after her

entrance in the house, typhoid fever appeared; taking principally the other servants working with her and also the people for whom she worked. In ten years she had been the cause of 36 cases of typhoid fever. She carried quantities of bacilli in her fæces for years . . . It is not only cooks like her that are dangerous, but any bacilli carriers may that have to prepare or assist in the preparation of human food. The number of cases due to that cause is considerable, although not correctly known.

Of course, there is a great difference with the dangers that may result in the condition of the germ carriers, between those that carry the bacilli of Koch and that of Eberth and there is no relation between them, but yet there can be no doubt that as far as the result, the *contagion*, is concerned, for both diseases it is the same, the cause is alike. But the sanitary measures that both diseases require differ widely. If the tubercle carrier can be destroyed, for the other dangerous living beings the only possible way to guard against infection would be to absolutely prevent carriers and distributors of germs to be employed to prepare human alimentary substances until they are found to be free from bacilli. A measure which I believe is carried out in New York State by the Detention Hospital.

\* \* \*

THERAPY OF OIL OF TURPENTINE.—If oil of turpentine has strong irritating properties when applied upon the surface of the skin, on the contrary it is harmless upon mucous membranes and solutions of continuity. And not only does it not irritate these surfaces in a noticeable manner, but even sometimes it seems to have a soothing effect. Besides this, when it is applied upon wounds, or ulcerations with soft granulations and serous secretion, it improves them rapidly and brings them to quick cicatrization. It dries up muco-purulent discharges. And its usefulness is appreciated in producing amicrobian abscesses of fixation or in the treatment of so-called shoulder lameness.

All those properties are well known; but for what it is less resorted to, is for the great value of its injection, or of systematic painting, over the inside surface of open suppurating or sero-bloody cavities.

In the *Recueil de Medecine Veterinaire*, an army veterinarian, Mr. P. Charon, has recently published the results he has obtained, and related a few cases where by the use of oil of turpentine, the length of time the animals were laid up was considerably shortened and recovery simplified.

A mare had a very deep wound of the thigh, between the long vastus and the semi-tendinosus muscles. She had been under treatment for over one month; treated at last with injections of turpentine, she recovered in twenty days.—A horse had fistulous withers, spinous processes of vertebrae and part of the cartilage of the scapula have been removed. The discharge was profuse; five or six injections brought cicatrization in ten days.—A mare had a sore back, which had become complicated from various causes and remained rebellious to all treatment for several weeks. In four days a few cubic centimeters of the oil of turpentine were injected and followed by a rapid closing of the wound. But where Mr. Charon has principally had brilliant success is in the treatment of sero-bloody cysts, no matter in what region they were, in which the treatment consisted in free incision and daily coatings of the cavity with a layer of oil of turpentine. The length of time required for arrest of suppuration and the cicatrization has varied between six and eighteen days, when the animal could be returned to work. In only one exception the animal was under treatment for twenty-four days, but with him it was only in the last sixteen days that the turpentine was resorted to.

Without mentioning more cases, Mr. Charon puts the question, How does the oil of turpentine act? and he says: "The paintings of the inside of the walls of open sero-bloody or purulent cavities or the injections within these of spirit of turpentine is not accompanied with nervous irritation, there is no itch-



ing, as it is observed in the sub-cutaneous injections of spirit free from guaiacol. The peculiar action of the oil comes from its physico-chemical properties. It is true that we do not know what changes turpentine undergoes in the blood and in the tissues, but we know that exposed to the air, the spirits of turpentine attracts energetically the oxygen of the atmosphere in ozonizing it. For some, this ozonizing action is continued after absorption in the organism, even on the level of the eliminating surfaces. It can then be understood that this ozonization takes place in direct contact with the tissues where air can reach and where aerobic microbes, oxygen fixators, grow and multiply.

Superficially the slight, soothing irritation occasioned by oil of turpentine is sufficient to promote in the wounds or cysts a true cellular activity. When in contact with the spirit, the blood becomes redder and richer in white corpuscles, an abundant leucocytose takes place, and the consequence of this leucocytar increase is a vital, phagocytar, acute anti-microbial activity, with a less production of pus, a more complete utilization of the whole white corpuscles in the work of repairs. The anti-microbial antiseptic power is explained by the absorption of a certain quantity of water when in the presence of tissues with alkaline reaction and by the transformation of the oil of turpentine into terpine and terpinol. If this antiseptic power has been taken advantage of in the treatment of pulmonary gangrene, cancer, lock-jaw, anasarca and others, it can be easily understood that when in the presence of the ordinary vulgar microbes of suppuration, oil of turpentine can act efficaciously.

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THERAPEUTY.—May I be allowed a few remarks on Therapy and refer to a communication from a German paper, *Munchen. Medec. Wochenschrift*, by Dr. P. Erlich, upon ARSENIC, ATOXYL and TRYPANOSOMES.

The phenomena of the vital coloration of tissues constitutes certainly one of the most curious facts of biology. It is diffi-

cult to understand *why* the methylen of blue, for instance, colors nervous tissue, neutral red cellular granulations, pyrol red the interstitial tissue of testicles. For want of a better explanation, a special affinity of this or that substance by this or that complexity of cells is admitted. Therefore, according to the terminology of Erlich, the existence is admitted, in relation with vital coloration, of chemical substances neurotropic and lipotropic. But does that tropism exist only for chemical substances properly so called? In a recent conference at the German Society of Chemistry, Erlich has again mentioned on this subject the substances resulting from the cellular activity and which are formed in the organism during an artificial or spontaneous immunization. These substances are strictly bacteriotropic, in this, that they would fix themselves upon bacterias and destroy them, without having the slightest action upon the organism itself. Erlich believes that it is in the researches of analogous substances that the future of therapeuty rests.

Can this research be made in a scientific manner, that takes for its guide, facts already established at present? Are they facts authorizing the thought that bactericid substances, deprived of all toxicity upon organism shall be made? Erlich believes it and during his conference, mentioned to support his opinion, a series of very curious experiments, concerning the action of arsenic and atoxyl upon trypanosomes. We know that arsenic has proved less efficacious, in the treatment of trypanosomes, than atoxyl, which is a meta-arsen anilide. Then, if in a molecule of this substance is introduced acetic acid, a new compound is obtained which has scarcely any toxicity for the organism but whose bacteriotropic action is considerably increased. This new substance is the arsenyl-acetic acid.

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Experiments made with this acid have shown besides a very curious fact. *In vitro*, trypanosomes are not affected, even by concentrated solutions of this acid. But on the contrary when

this acid is injected, even very diluted, to an animal infected with trypanosomes, those are rapidly destroyed in the organism. How can this inefficacy of acetic-arsenic acid *in vitro*, and its very energetic action in the organism, be explained? Can it be admitted that being decomposed in the organism, this acid gives birth to a bactericid substance? Must it be supposed that this acid acts by stimulating the production of amboceptors from the cells?

The answer is given by a handsome experiment of Erlich. Upon trypanosomes, *in vitro*, is made to act, in various degrees of concentration, an oxidated arsenical compound, excessively toxic and a reduced bivalent arsenical mixture, having a toxicity much reduced. It will be observed that the oxydated compound does act upon the trypanosomes only in a concentration of 1 p. 20. By opposition, the reduced product kills instantaneously trypanosomes at a concentration of 1 p. 100,000, in 3 minutes if concentrated in proportion of 1 p. 500,000, in 18 minutes in concentration of 1 p. 10,000,000.

The deduction is that the inefficacy of an arsenical product, *in vitro*, and its efficacy in the organism depends simply on the transformation in the organism of the oxydated into a reduced product. Likewise, again starting from the same principle, chemistry can find new combinations with remarkable affinity. Thus Erlich having met with trypanosomes, which resisted the action of all the arsenical preparations that he had. Guided by some considerations, he has prepared a new compound of arsenic, the arsen-phenyl-glycine, which has proved very efficacious against refractory trypanosomes.

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COLIC.—The subject of colic is one which always presents some points of interest, no matter if it is merely the relating of a single case or that of a series of observations, there is always something to gather from it. The *Veterinary Record* of January of this year, has from Mr. Lomas, M. R. C. V. S., an

article which is a record of the cases of colic which he has had to treat during the space of ten years, and from which good additions to the whole subject of colic can be extracted.

The horses were of the various types of vanners used to do a work very severe and where all with few exceptions had to trot more or less. There were 1,244 cases of colic attended to, and they were in the record arranged according to years and months. In a first table, it is stated that successively from January to December in those ten years, the number of cases seen have been 100, 100.90, 108, 89, 89, 107, 115, 135, 92, 117 and at a first glance it appears as if the influence of the weather and season had something to do with the causation of the colic; as indeed, the months where the number of cases were the largest, October and December, are those where bad weather prevails. But Mr. Lomas has not arrived at that conclusion, or at least if bad weather has an influence, it is not a direct one but an indirect, which is namely the increase of work. In these months, indeed, the work is the hardest. And again apart from this, it has been noticed that, such factor, work, is, that it has been quite rare to have a case of colic on Sunday, when almost all the horses are resting and those that work do so lightly.

The number of deaths amounted to 77. for which 32 are credited as due to twist of the intestines and 25 to volvulus. Has the hardest work any relation with these two causes of death? Comparing the figures as they are given by month, it is observed that as the work is harder, which is always the case in autumn, there is an increase in the number of twists, 5 in September, 7 in October, and there is also a majority of deaths from volvulus in the second half of the year as compared with the first when the work is less severe.

A point of interest with the statement of Mr. Lomas, is that the death rate is very largely controlled by the youth of the horses and the work exacted from them. For instance, in the three first periods of service, 13, 13, and 15 horses have died and the average of deaths fell down afterwards to 3 to 2 and 1 to

none as the animals grew older and better fitted to stand the work. Old horses, over  $3\frac{1}{2}$  years in service, have colic but the death rate is very low as compared with those of shorter service.

After these interesting statistics Mr. Lomas makes allusion to the frequency of the occurrence of twists taking place in the large colon at the beginning and the termination of that portion of the intestines and in relation with this, mentions that a twist at this place, has a characteristic diagnostic symptom, viz: the *blanching* of the visible mucous membranes, which is distinctly recognizable two hours before death. For him also, when cases, which present themselves first with intermittent pains, suddenly change with continuous sufferings, it is at that time that the twist occurs. At least it has been so in the cases he has seen. At first an advocate of Eserine, he met with a certain number of cases which proved fatal which he rather attributed to the use of that drug, he stopped using it, but found that he had twist just as well with or without.

There is no doubt that these facts make a good addition to the general literature of colic!

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ATHEROMA.—Atheroma is known as an affection which exists in horses, but to what extent is probably not generally appreciated. On that account the investigations that I find recorded in the *Comptes Rendus* of the *Société de Biologie* are interesting.

It is actually admitted by many scientists that intestinal intoxication plays a very important part in the etiology of the atheroma. As the intoxication depends certainly on the condition of the microbial flora, which varies according to the kind of alimentation, it was evident, said M. M. Weinberg and A. Vieillard, that it was interesting to know exactly the proportion of cases of atheroma in herbivorous animals in comparison with those that were found in animals which are submitted to carnivorous or mixed diet.

It is already asserted that rabbits can present atheromatous lesions, not as the results of experimentation but naturally. These lesions have been found in 48 cases out of 692 rabbits or in 6.6 per cent. of the cases.

What is the frequency in horses?

Already Kitt, Cadeac, Hans Lyding, Ball have made investigations in relation to the vascular lesions of horses, but they have not given a very exact idea of the frequency of these lesions. M. M. Weinberg and Vieillard have examined, at one of the abattoirs of Hippophagy in Paris, 1,511 horses, made careful inspection of the heart, the aorta and its principal branches and they have found very remarkable facts, which they gathered into a table showing that atheroma of the aorta was found in 57 cases, and that of the cœliac trunk in 58 cases, say 7.6 per cent. of the cases. The lesions existed at the cross of the aorta and often on a level with its diaphragmatic portion. In the majority of cases the calcareous deposits presented the same aspect as those of the spontaneous atheroma of rabbits.

Castration does not seem to have any action or influence in the etiology or development of the lesions. Out of 44 cases where lesions existed, 27 were in stallions and mares, the other 17 in geldings. However, in stallions the calcareous deposits of the aorta were much larger than those found in geldings.

The same can be said in relation to the organs with internal secretion. One small adenoma was found in a suprarenal capsule and 4 cases in the thyroid gland out of 57 atheromatous horses. The conclusions of the communication are resumed:

1.—Out of 1,511 horses, 7.6 per cent. presented atheromatous lesions.

2.—In the great majority of cases, the calcareous deposits had the same aspect as those of the spontaneous disease of rabbits.

3.—Castration and lesions of organs with internal secretion do not seem to have any influence on the etiology or evolution of atheromatous lesions.

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BIBLIOGRAPHICAL NOTES.—The publishing house of Taylor & Carpenter, at Ithaca, has sent us a third edition of the *Pathology and Differential Diagnosis of Infectious Diseases of Animals*, by Doctor Veranus A. Moore, the worthy Director of the New York State Veterinary College. It is just two years ago that I had the great pleasure to notice in our pages the second edition of the same work, and it is very gratifying to see that whatever praise I may have given to the work then, students and practitioners have appreciated, by obliging the author to revise and enlarge the new edition. It is not that it forms a much larger book, nor that the revision has made it entirely a new work, no. But in perusing, while one may find again the same arrangement in the revision and contents of the chapters, yet additions are met with in quite sufficient numbers to give the third edition the aspect that whatever new facts in the pathology and differential diagnosis of infectious diseases may have come out in the last two years, Dr. Moore has not failed to take advantage of them and to present them to his future readers, which no doubt will again be plenty and will make for the work another success.

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For the students in our many schools, Doctor H. D. Hanson, the recently appointed Professor of Materia Medica and Therapeutics in the Faculty of the Veterinary Department of New York University, the New York-American Veterinary College, has just offered the second edition of his *Practice of Equine Medicine*, which, following the examples of some authors, he publishes himself.

Hanson's *Practice of Equine Medicine* is a work that by its value ought to have commanded a larger number of editions,

unless the printed copies issued in the first have been too numerous. Arranged as it is by questions and answers it is an indispensable work which must fill the essential purpose for which it is written and well written. Of course, as the author says, it is interesting to the busy practitioner; but I think that for students it is *the work by excellence* when at a certain time of his studies he wants to review and prepare himself for proper answering to possible questions when the critical moment of the examination has come.

The first edition issued some years ago was favorably received by the profession, the second will prove still more satisfactory, no doubt and we can hope for an early third edition, this time considerably enlarged; as if condensation is good, a little magnifying would give Practice of Equine Medicine a more imposing and valuable aspect.

A. L.

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### THE CORNERSTONE.

It may be interesting to readers of the REVIEW, especially at this time as our thoughts turn to our forthcoming international veterinary convention at Chicago in September, to know that, figuratively speaking, the cornerstone of the American Veterinary Medical Association was laid in that city in 1890. It was in Chicago in September of that year that the late Dr. Charles B. Michener, then President, said: "To-day we place the cornerstone; the foundation of our association has been building since June, 1863." The association met again in Chicago in 1893, when another big stride was taken in advance.

More than a quarter of a century, 1863-1890, to some of the younger members of the profession may seem a long time for the building of a foundation, although it is not strange at all that such a long period of time was consumed for this all-important part of the work which was undertaken and had to be carried on for many years by a few far-seeing, self-sacrificing



men whose ideals are at last being rapidly realized throughout the length and breadth of the American continent. These men well knew that a substantial and enduring foundation could not be built in a hurry without well-laid plans and carefully-drawn specifications.

The wisdom of laying the cornerstone at Chicago, and not in one of the large Eastern cities where the association had its inception and where all its meetings, except one, had been held, has been demonstrated in many and unmistakable ways. Although named the United States Veterinary Medical Association, it had the characteristics more of a local than a national organization prior to 1890 and it was not until 1898, at the Omaha convention, that it became an international body.

The cornerstone was well laid, at the right place and with the right kind of cement, and by the action of the Omaha convention in 1898 the association was enabled to carry out more fully its noble purposes and has become potential in the advancement and upbuilding of the profession on this continent without regard to political limits or geographical boundaries. Those who attend the 1909 meeting will have the satisfaction of seeing and learning something of the imposing edifice whose cornerstone was laid at Chicago in 1890, and is being erected by the American veterinary profession upon a foundation which took more than a quarter of a century to build. The profession of the entire continent now enjoys intimate relationship and the broad scope and important character of the work of the American Veterinary Medical Association is too well known by the profession throughout the world to need further comment.

The association now has a large and highly creditable Canadian membership. The 1903 convention was held at Ottawa, Canada. No better evidence of the fraternal ties that unite the veterinarians of Canada and the United States could be given than the fact that at the last annual convention held at Philadelphia, in 1908, Dr. John G. Rutherford, Veterinary Director-General and Live Stock Commissioner of the Dominion of Can-

ada, was elected to the presidency of the American Veterinary Medical Association and consequently we shall have the distinguished honor of having our Canadian colleague preside at our deliberations at the Chicago convention.

The REVIEW has always advocated the Central West as the very best possible meeting place for the A. V. M. A. Chicago is the ideal spot, not Western at all, but central and equally accessible from all parts of the continent. The railroad facilities are the best in the world and the accommodations in Chicago for a large convention are unsurpassed anywhere. These advantages Chicago has to offer to conventions of all kinds, but aside from her central location, accessibility, railroad and hotel accommodations she has special and peculiar attractions for the progressive veterinarian. Here are to be seen the great horse and live stock markets, stockyards, abattoirs and packing-houses; the meat-inspection service of the federal Bureau of Animal Industry as conducted in mammoth establishments; unsurpassed facilities for pathological exhibits, unlimited material among the several classes of live stock for clinical study and demonstration, to say nothing of the interest the veterinarian has in veterinary education and administration work for which the Western metropolis is noted.

The meetings in recent years have all been well attended, each one better than the preceding one and notable additions have been made to the membership at each meeting. While proud of the splendid meetings, yet we look forward to something at Chicago that will eclipse the largest veterinary conventions and congresses that have ever been held in the annals of veterinary progress in any country of the world. If the 46th annual meeting of the A. V. M. A. is not thoroughly representative of the present progressive condition of the American veterinary profession as well as being by big odds the largest veterinary meeting ever assembled in this or any other country we do not interpret the signs aright. We also venture the prediction that there will be several hundred applicants knocking at our doors for

admission to membership. After all is said and done the 1909 meeting, like all other meetings of scientific bodies, will be judged by the scope and character of its deliberations and accomplishments rather than by the multitude in attendance. It therefore behooves those who contemplate contributing to the program to make adequate preparations at an early date so that what is offered may be creditable to ourselves and advantageous to the profession in general.

Another thing in connection with these annual meetings is the supreme importance of the enlightenment and direction of public opinion regarding veterinary problems and administration which may be afforded thereby. Our forthcoming meeting offers an exceptional opportunity for this very sort of thing and we are not sure but that the enlightenment and direction of public opinion in America to-day may not be quite as important to the health and wealth of mankind as the advancement of the science itself.

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**HANGED ON MOTHER'S BACK.**—The oddest story of the killing of a calf in the annals of the profession comes from Farmer William Reid, of Chester county, Pa. While the cow lay in her stall at night, a calf, tied in the same stall, clambered over her.

The cow rose, lifted the calf on her back, and when morning came there it was, dead, hanged on its mother's back.

**RELEASE OF QUARANTINE FOR SHEEP SCAB.**—As a result of the good progress made by the Bureau of Animal Industry in co-operation with state authorities in the eradication of sheep scab, an order has been issued by the Secretary of Agriculture, effective April 1, removing the federal quarantine on account of this disease from Montana and from portions of North Dakota and South Dakota lying south and west of the Missouri river. The states and territories remaining in quarantine for this disease are Washington, Oregon, California, Nevada, Utah, Colorado, Arizona, New Mexico, and Texas. The infection in parts of this area is so slight and such good headway is being made toward its eradication that the Bureau hopes to be able to release further territory from quarantine during the present year.

## ORIGINAL ARTICLES.

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### THE ECONOMIC IMPORTANCE OF TUBERCULOSIS OF FOOD-PRODUCING ANIMALS.\*

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INDUSTRY, WASHINGTON, D. C.

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#### INTRODUCTORY.

It is the purpose of this paper to call attention briefly to the serious injury which tuberculosis causes to the live stock industry from the economic standpoint, and to suggest means of overcoming it, discussing the subject as it affects the United States. Regardless of the question of the communicability of tuberculosis from animals to man and the bearing of animal tuberculosis on the public health, it is a well known fact that this disease causes heavy financial loss to the live stock industry; and while the saving of human life affords the highest motive for combating tuberculosis, the prevention of financial loss is alone a sufficient reason for undertaking the eradication of the disease from our farm animals.

The movement in the last few years for a more wholesome food supply has resulted in drawing attention to the part played by tuberculosis as regards both health and economics. It must be realized that the exclusion of tuberculous meat and dairy products from the food supply means a reduction in the quantity of available food, with a corresponding tendency to an increase in the cost of necessities of life. The economic problem therefore

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\*Read before the International Congress on Tuberculosis, Washington, D. C., 1908.

concerns not only the stock raiser and the producer but the consumer, which means practically everybody. No nation is so wealthy that it can afford to sacrifice, year after year, a considerable and increasing proportion of its food supply, especially when by proper means the loss can be reduced and in time prevented entirely. This is a problem that must be faced eventually, and the earlier this is understood the more easily it can be solved.

### THE PREVALENCE OF ANIMAL TUBERCULOSIS.

While tuberculosis among animals is less prevalent in the United States than in some other countries, it has progressed to an alarming extent even in this country and is undoubtedly on the increase, especially in states where no adequate measures have been taken against it. The animals principally affected are cattle and hogs. The disease readily spreads among cattle that come in close contact with each other, as in dairy herds, and experiments by the Bureau of Animal Industry have shown that it is easily communicated from cattle to hogs by the common practices of giving skim milk to hogs and allowing them to feed on the excrement of cattle. The increase of tuberculosis among hogs in the United States has been very marked in recent years. Sheep and goats are rarely affected, probably because of a natural tendency toward immunity or because they are not generally exposed to infection.

The two principal sources of data as to the prevalence of tuberculosis among live stock are: (1) meat inspection statistics, and (2) records of the tuberculin test. Meat inspection throws light on the disease in cattle, hogs, sheep, and goats, while the information derived from the tuberculin test is practically confined to cattle.

### MEAT INSPECTION STATISTICS.

The federal meat inspection, as extended under the law of June 30, 1906, now covers more than half of all the animals

slaughtered for food in the United States, and the proportion of animals found affected with tuberculosis under this inspection service affords a basis for forming some idea of the extent to which the disease exists among the meat animals of the country.

The following table shows the number of animals of each kind slaughtered under government inspection during the fiscal year ending June 30, 1908, and the number and percentage found affected with tuberculosis.

Animals slaughtered under federal inspection in the United States, with number and percentage found tuberculous, during fiscal year, 1908.

| Kind.        | Number<br>Slaughtered. | Number<br>Tuberculous. | Percentage<br>Tuberculous. |
|--------------|------------------------|------------------------|----------------------------|
| Cattle ..... | 7,116,275              | 68,395                 | 0.961                      |
| Calves ..... | 1,995,487              | 524                    | 0.026                      |
| Hogs .....   | 35,113,077             | 719,309                | 2.049                      |
| Sheep .....  | 9,702,545              | 40                     | 0.000                      |
| Goats .....  | 45,953                 | 1                      | 0.000                      |
| Total .....  | 53,973,337             | 788,269                | 1.460                      |

Even a larger proportion of the animals slaughtered at establishments without federal inspection are tuberculous, as one effect of a rigid inspection is to cause the establishments under inspection to exercise care in buying animals so as to minimize condemnations, while suspicious looking animals are naturally diverted to the small local abattoirs that have no inspection. This was demonstrated by comparing results at establishments soon after they were placed under inspection by the new law with those at establishments where inspection had been in force for a long time, relatively twice as many cattle being condemned for tuberculosis at the former as at the latter places.

Taking these facts into consideration, it seems likely that more than one per cent. of the beef cattle in the United States are affected with tuberculosis to some degree, while over two per cent. of the hogs slaughtered are affected.

### THE TUBERCULIN TEST.

It is known that dairy cattle are more generally affected than beef cattle, as the tuberculin test has shown that from 5 to 25 per cent. of the cows supplying milk to certain cities were tuberculous. For instance, tests made in 1907 on a large proportion of the herds supplying milk to the city of Washington showed about 17 per cent. of the cattle reacting.

For fifteen years the Bureau of Animal Industry has been preparing tuberculin and supplying it to state and city authorities for official use, besides using it in tests by its own employees. Recently the reports of tests made with this tuberculin during this period have been carefully analyzed and tabulated. Out of 400,000 cattle tested there were 37,000 reactions, or 9.25 per cent.

The majority of the cattle tested were dairy cattle, and the tests were made under various conditions. By far the larger proportion of the tests were made on cattle that had been within a state for a year or more. In some cases tests were made compulsorily on all cows supplying milk to a city; in other cases they were made when requested by owners, and in still other when the presence of tuberculosis was suspected in certain herds. It is impossible to determine accurately the weight of all these factors; but considering the fact that while dairy cattle largely predominate their average is reduced by a certain proportion of other cattle, and offsetting against this the fact that the testing of herds under suspicion tends to raise the average somewhat, it seems reasonable to conclude from these tests that probably ten

per cent. of the dairy cattle in the country are affected with tuberculosis.

A remarkable feature of the reports referred to is the manner in which the diagnosis by the tuberculin test was confirmed by post mortem examination or reacting animals that were slaughtered. Out of 24,784 reacting animals slaughtered, lesions of tuberculosis were found in 24,387, a percentage of 98.39. The Bureau has positive knowledge that in at least one state the testing was not done in a careful and reliable manner. If we discard the returns from this state, the proportion of cases in which the tuberculin reaction was confirmed by post mortem is raised to 98.81 per cent. It is possible, too, that in some of the negative cases tuberculosis was really present but the lesions were so slight as to escape detection on post mortem examination by ordinary methods. Surely these figures, representing the work of scores of individuals in all parts of the United States over a period of fifteen years, bear strong testimony to the marvelous accuracy of the tuberculin test. Further evidence on this point is afforded by the slaughter, during the past year or two, in or near the city of Washington, of 126 cattle which had reacted to the test when applied by Bureau veterinarians, with only one failure to find lesions of tuberculosis on post mortem examination, the percentage of accuracy being 99.21.

Properly prepared tuberculin applied by competent persons is thus shown to be a wonderfully reliable agent for diagnosing tuberculosis. In cases where the test appears to give unsatisfactory results this is usually due to the use of a poor quality of tuberculin or to ignorance or carelessness in applying it.

The following table shows the result of the tests above referred to, arranged according to states:

Results of tuberculin tests of cattle by state and federal officers with tuberculin prepared by the Bureau of Animal Industry, 1893 to July 31, 1908, inclusive:



| States.            | No. of<br>Cattle<br>Tested. | No. Reacting. | Percentage React-<br>ing. | No. of Reactors<br>Slaughtered. | No. Found Tuber-<br>culous on Post<br>Mortem. | Percentage Found<br>Tuberculous on<br>Post Mortem. |
|--------------------|-----------------------------|---------------|---------------------------|---------------------------------|-----------------------------------------------|----------------------------------------------------|
| Alabama .....      | 20                          | ....          | ....                      | ....                            | ....                                          | ....                                               |
| Arizona .....      | 49                          | 16            | 32.65                     | 16                              | 16                                            | 100.00                                             |
| California .....   | 9,618                       | 1,112         | 11.56                     | 872                             | 872                                           | 100.00                                             |
| Colorado .....     | 822                         | 50            | 6.08                      | 14                              | 13                                            | 92.86                                              |
| Connecticut .....  | 6,080                       | 852           | 14.01                     | 730                             | 748                                           | 99.73                                              |
| Delaware .....     | 7                           | ....          | ....                      | ....                            | ....                                          | ....                                               |
| Dist. of Columbia  | 8                           | 7             | 87.50                     | 5                               | 5                                             | 100.00                                             |
| Florida .....      | 1                           | ....          | ....                      | ....                            | ....                                          | ....                                               |
| Georgia .....      | 49                          | 19            | 38.78                     | ....                            | ....                                          | ....                                               |
| Idaho .....        | 10                          | ....          | ....                      | ....                            | ....                                          | ....                                               |
| Illinois .....     | 7,120                       | 790           | 11.09                     | 619                             | 597                                           | 96.45                                              |
| Indiana .....      | 2,935                       | 246           | 8.38                      | 129                             | 127                                           | 98.45                                              |
| Iowa .....         | 4,020                       | 778           | 19.35                     | 239                             | 220                                           | 92.05                                              |
| Kansas .....       | 120                         | 4             | 3.33                      | 4                               | 3                                             | 75.00                                              |
| Kentucky .....     | 327                         | 37            | 11.31                     | 13                              | 12                                            | 92.31                                              |
| Maine .....        | 3,264                       | 149           | 4.56                      | 116                             | 109                                           | 93.97                                              |
| Maryland .....     | 58                          | 8             | 13.79                     | 6                               | 6                                             | 100.00                                             |
| Massachusetts ...  | 86,223                      | 11,853        | 13.75                     | 10,760                          | 10,688                                        | 99.34                                              |
| Michigan .....     | 2,155                       | 351           | 16.29                     | 97                              | 95                                            | 97.94                                              |
| Minnesota .....    | 60,733                      | 3,031         | 4.99                      | 172                             | 135                                           | 78.49                                              |
| Mississippi .....  | 133                         | 9             | 6.77                      | ....                            | ....                                          | ....                                               |
| Missouri .....     | 1,680                       | 133           | 7.92                      | 4                               | 4                                             | 100.00                                             |
| Montana .....      | 62                          | 25            | 40.33                     | 2                               | 1                                             | 50.00                                              |
| Nebraska .....     | 105                         | 49            | 46.67                     | 18                              | 18                                            | 100.00                                             |
| New Hampshire...   | 164                         | 20            | 12.18                     | 19                              | 19                                            | 100.00                                             |
| New Jersey .....   | 3,293                       | 828           | 25.14                     | 584                             | 579                                           | 99.15                                              |
| New Mexico .....   | 196                         | 1             | .51                       | 1                               | 1                                             | 100.00                                             |
| New York .....     | 4,034                       | 565           | 14.00                     | 533                             | 532                                           | 99.81                                              |
| North Carolina ..  | 1,207                       | 208           | 17.23                     | 43                              | 28                                            | 65.12                                              |
| North Dakota....   | 702                         | 130           | 18.50                     | 13                              | 13                                            | 100.00                                             |
| Ohio .....         | 2,933                       | 425           | 14.49                     | 69                              | 68                                            | 98.55                                              |
| Oklahoma .....     | 385                         | 4             | 1.04                      | 2                               | 2                                             | 100.00                                             |
| Oregon .....       | 1,466                       | 351           | 23.94                     | 274                             | 266                                           | 97.05                                              |
| Pennsylvania ..... | 90                          | 25            | 27.77                     | 7                               | 7                                             | 100.00                                             |
| Rhode Island....   | 653                         | 125           | 19.14                     | 104                             | 104                                           | 100.00                                             |
| South Carolina ..  | 305                         | 40            | 10.12                     | 1                               | 1                                             | 100.00                                             |
| Tennessee .....    | 88                          | 7             | 7.95                      | ....                            | ....                                          | ....                                               |
| Texas .....        | 76                          | ....          | ....                      | ....                            | ....                                          | ....                                               |
| Utah .....         | 120                         | 21            | 17.50                     | 12                              | 12                                            | 100.00                                             |
| Vermont .....      | 162,570                     | 10,628        | 6.54                      | 8,248                           | 8,166                                         | 99.00                                              |
| Virginia .....     | 890                         | 158           | 17.58                     | 101                             | 98                                            | 97.03                                              |
| Washington .....   | 2,779                       | 455           | 16.37                     | 10                              | 8                                             | 80.00                                              |
| West Virginia...   | 60                          | 13            | 21.67                     | 12                              | 12                                            | 100.00                                             |
| Wisconsin.....     | 32,297                      | 3,477         | 10.77                     | 915                             | 802                                           | 87.65                                              |
| Wyoming .....      | 2                           | ....          | ....                      | ....                            | ....                                          | ....                                               |
| Total .....        | 400,008                     | 37,000        | 9.25                      | 24,784                          | 24,387                                        | 98.39                                              |

In this compilation the following basis has been adopted in determining what constitutes a reaction, as in the experience of the Bureau of Animal Industry this method has been found to give reliable results: A reaction consists of a rise of  $2^{\circ}$  F. or more above the highest temperature before injection, provided the maximum temperature after injection reaches  $103.8^{\circ}$  F.

It should also be explained that the number of tests shown in the table represents only those of which the Bureau received reports, and not the entire number of doses of tuberculin prepared and distributed by the Bureau during the period named.

Assuming that 10 per cent. represents the prevalence of tuberculosis among dairy cattle as indicated by tuberculin tests, and 1 per cent. among cattle slaughtered for beef as shown by the meat-inspection figures, and taking 21,194,000 as the number of milch cows and 50,073,000 as the number of other cattle in the United States on January 1, 1908, as estimated by the Bureau of Statistics of the Department of Agriculture, we conclude that as a general average about 3.5 per cent. of the cattle of this country are affected with tuberculosis.

#### ECONOMIC LOSSES FROM ANIMAL TUBERCULOSIS.

While the financial loss caused by tuberculosis of farm animals can not be calculated with exactness, a study of the subject affords a basis for estimates sufficiently close to show that it is a serious drain on the live-stock industry.

#### LOSS ON TUBERCULOUS ANIMALS SLAUGHTERED.

The writer recently made an effort to collect reliable data as to the loss caused by tuberculosis in animals slaughtered under government meat inspection. Carefully compiled figures were obtained from a number of large firms engaged in the slaughtering and meat-packing business, in one instance the calculations covering an entire year's business. In arriving at the loss the general method, in brief, was to deduct from the average cost

of a live animal of a certain class the average amount realized from a tuberculous carcass of that class, the difference representing the loss.

Under the inspection system the animals found tuberculous are disposed of in three classes, according to the extent of the disease. Carcasses which show very slight infection may often be safely passed for food after the removal of the lesions, the loss in such cases of course being small. Other carcasses, affected to a somewhat greater degree but still not badly diseased, are allowed to be rendered into lard or tallow at a sterilizing temperature after all diseased portions have been cut away and condemned. In these cases the loss is more considerable. A third class comprises carcasses that are considered unfit for food in any form and are totally condemned. The loss on these is still greater, amounting in the case of cattle to about three-fourths of the cost. The salvage consists of the hide, grease, fertilizer, etc.

The loss on condemned adult cattle was found to vary from \$10 to \$75 a head, according to grade, price, weight, etc. While the loss per carcass is of course heavier on the higher priced animals, the proportion of condemnations is much greater among the cheaper grades. After weighing these factors and studying the figures the writer has concluded that for the purpose of this paper the condemned cattle may be grouped in two general classes, one representing about the average of the better grades, including those known as native and western cattle, in which steers largely predominate, and the other representing the cheaper grades and lighter weights, including "cutters" and "canners," largely cows. At present Chicago market prices the loss on the first class, when condemned, is estimated at \$45 a head, and on the second class at \$18 a head. These figures are believed to be conservative and below rather than above the actual losses, as are all the estimates made in this article. It is also estimated that two-thirds of the condemnations occur in the cheaper class of cattle and one-third in the higher class. This

proportion gives \$27 a head as the general average loss on condemned cattle. On carcasses rendered into tallow the average loss is estimated at \$20. On a percentage basis the combined average loss on cattle carcasses condemned and those rendered into tallow is about 70 per cent. of the cost of the live animals. The loss on beef carcasses passed for food is very slight, being estimated at 50 cents each.

The loss on calves condemned is about \$7 a head, and the loss on those passed for food after condemning an organ or part is estimated at 25 cents a head.

The average loss on tuberculous hogs is estimated at \$8.50 or 55 per cent. of those condemned, \$5.75 or 38 per cent. on those rendered into lard, and 50 cents on those passed for food.

Applying the foregoing figures to the number of animals found tuberculous in the federal meat inspection during the fiscal year ending June 30, 1908, the annual loss is as follows: Cattle, \$710,677; hogs, \$1,401,723; sheep and goats, \$35; making a total of \$2,112,436. The significance of this loss may be better appreciated when it is known that tuberculosis is the cause of two-thirds of the entire loss resulting from condemnations at the time of slaughter in the meat-inspection service.

The loss on animals slaughtered without federal inspection can not be so readily computed. Some states and municipalities have more or less efficient inspection systems, but the great majority of the animals slaughtered without government inspection are not subjected to inspection of any kind, and it has already been pointed out that tuberculosis is doubtless more prevalent among them than among those coming under federal inspection. It is safe to say, however, that without inspection the actual loss is very slight. Nevertheless the writer is of the opinion that the loss should be computed as it would occur under efficient inspection. Applying to the number of animals slaughtered without federal inspection the same factors that were used for those coming under inspection, but assuming that the cattle are generally of an inferior quality and worth 25 per cent. less, it is

estimated that the loss because of tuberculosis among animals slaughtered without government inspection would, if proper inspection were applied, reach \$1,720,000 a year, making the aggregate estimated loss on all food animals killed in the United States \$3,832,436 annually.

#### DEPRECIATION IN VALUE AND OTHER LOSSES.

Aside from the loss on animals slaughtered, tuberculosis unquestionably causes a considerable depreciation in the value of those remaining alive. There are no definite data upon which to calculate this depreciation, but it is entirely reasonable to estimate that tuberculous milch cows decrease in value annually at least one-tenth of what the loss would be if they were slaughtered and condemned, while other cattle depreciate annually one-third and hogs one-half of such loss. On this basis, taking the estimate of the Bureau of Statistics of the Department of Agriculture as to the number and value of farm animals in the United States January 1, 1908, and assuming that 10 per cent. of dairy cattle, 1 per cent. of other cattle, and 2 per cent. of hogs are tuberculous, the total annual depreciation is no less than \$8,049,889.

Tuberculosis also has the effect of decreasing the productiveness of dairy cows by diminishing the yield of milk as well as perhaps in some cases by shortening their lives and consequently the period during which they produce milk. Again the amount of the loss is largely a matter of conjecture, but the writer feels that he is within reason in estimating that the average milk yield of a tuberculous cow is 10 per cent. less than that of a healthy one, and on this basis the annual loss, valuing milk at wholesale prices, is \$1,150,000.

Serious damage is caused by tuberculosis from the standpoint of breeding. The disease is found to a greater extent in pure-bred herds than in common stock. In adding fine animals with a view to "breeding up" his herd an owner may unwittingly also introduce tuberculosis with disastrous results. By causing unthriftiness and impairment of fecundity, the disease has an adverse effect upon the number and value of the offspring.

The influence of tuberculosis toward increasing the cost of meat and dairy products has already been alluded to. There is also a considerable economic loss resulting from the destruction of cattle in the efforts already being made in some states to eliminate the disease. The trade in live animals and in animal food products also suffers losses because of tuberculosis. Doubtless there are still other sources of loss chargeable to this disease in live stock, such as the expense of maintaining a sanitary service, disinfection of premises, etc.

#### THE AGGREGATE LOSS.

Taking into consideration the various items mentioned, the tribute which the United States pays each year to this scourge among its farm animals aggregates more than \$14,000,000. Such a loss is too great, merely as a matter of economics, to be allowed to continue and increase from year to year. And when in addition we consider the bearing of animal tuberculosis on human health, it seems imperative that vigorous measures should be taken to eradicate the disease from our herds, especially when such eradication seems entirely possible and practical.

#### THE CONTROL AND ERADICATION OF TUBERCULOSIS.

Any efforts to reduce or control tuberculosis of live stock in order to be of lasting virtue must have eradication in view as the final object. We should not temporize with such an insidious malady, but should adopt aggressive measures that will insure success within a reasonable time.

It has been clearly shown by the work of the Bureau of Animal Industry and by other investigations that hogs readily contract tuberculosis from cattle and that diseased cattle are the primary source of the infection in hogs. The main problem, therefore, is to eradicate the disease in cattle, and when this is accomplished tuberculosis may easily be eradicated from hogs.

The eradication of animal tuberculosis may as well be recognized at the outset as a tremendous undertaking which will re-

quire not only the best efforts of the authorities in charge, but the sympathy and support of stock owners and the general public. Large sums of money will be necessary, and in order that adequate appropriations may be obtained the necessity and importance of the work must be generally realized and understood.

#### WHAT MAY BE DONE BY INDIVIDUALS.

Much may be done by the individual stock owner with proper assistance to exclude and eliminate the disease from his animals. He should be careful to avoid the introduction of tuberculosis into his herd by requiring that any cattle purchased shall have passed the tuberculin test. He can also do much to promote the health of his animals by keeping them in sanitary stables and under hygienic conditions. When tuberculosis is suspected he should notify the authorities and have his cattle tested. When the presence of the disease is known the safest course is to have the affected animals slaughtered, but in the case of valuable breeding stock, where slaughter would involve great sacrifice, the Bang system of segregation may be used.

#### EDUCATIONAL WORK.

The individual, however, must first be aroused as to the danger of having tuberculosis in his herd and the importance of eradicating it, and he must also be informed as to the nature of the disease and the best methods of combating it. Valuable work in this direction may be done by the general and agricultural press and by official publications, also by lectures at public gatherings, farmers' institutes, etc.

#### GOVERNMENT AND STATE MEASURES.

If the campaign for the eradication of animal tuberculosis is to be comprehensive, systematic, and generally successful, it must be directed by federal and state officials conjointly, who must be armed with adequate laws and funds and supported by public opinion. Excellent work has been done by the authorities of several states during recent years, but a study of the laws and

regulations of all the states shows that in most of them the importance of the subject is not appreciated. Thirteen of the states at present require the tuberculin test on cattle brought in, this requirement usually being limited to cattle intended for dairy or breeding purposes. Fourteen states have provisions for the slaughter of animals found affected with tuberculosis and the payment of indemnity to the owners, while a few others give authority for condemnation and slaughter without making provision for indemnity.

The work of the federal government, as carried on by the Bureau of Animal Industry, so far consists in supplying tuberculin free of charge to state officers, in endeavoring to prevent the interstate shipment of tuberculous animals, and in tracing when practicable the origin of animals found affected with tuberculosis in the meat inspection service and notifying state authorities.

As a basis for further work federal and state authorities should first determine to what extent and in what localities tuberculosis exists to the greatest extent among live stock (where this has not already been done), and should first apply the tuberculin test generally and systematically to cattle in such sections.

The safest way of disposing of reacting animals, as previously stated, is to slaughter them. In order to reduce the financial loss to a minimum and at the same time guard against the sale of unwholesome meat, it is well to have such animals slaughtered at abattoirs under federal or other competent veterinary inspection. In this way a large proportion may be safely passed for food and made to yield their full meat value, while only those whose meat may be dangerous to health will be condemned.

In herds where the disease is found it is advisable to repeat the tuberculin test at intervals of six months, and after the disease has apparently been wiped out the test should still be applied once a year until it is known that infection does not remain and has not been reintroduced. Inspectors should be



stationed at important points for the purpose of testing cattle for breeding and dairy purposes, and each state that is endeavoring to eradicate the disease should require that no cattle for breeding or dairy purposes shall be admitted from without the state unless they have passed the tuberculin test. A good method of preventing the spread of tuberculosis among breeding stock would be the establishment by the state of one or more free herds of breeding cattle for the use of stock raisers in the state, or the state could certify to the health of free herds.

An effective means of locating and eradicating tuberculosis of live stock would be to establish by state legislation a system of tagging cows sent to market from infected districts for slaughter, so that when they are found tuberculous in the meat inspection they may be traced back to the place of origin, centers of infection located, and steps taken for eradication. The Bureau of Animal Industry is already co-operating with the authorities of some states by reporting on tuberculous animals, and the results so far have been very encouraging. To give the plan general application authorities should be empowered by law to require that shippers shall tag their cows in such a way that they may be identified and their origin determined.

As the eradication of tuberculosis is largely a public health measure, it is only reasonable that the state should compensate at least in part the persons whose cattle are slaughtered. This is not only fair, but it is absolutely essential if the co-operation of the cattle owners is to be secured.

It will be seen from the methods above discussed that in carrying on work for the eradication of animal tuberculosis in the United States, hearty co-operation and concurrence of action between the federal and state governments will be essential. Under the constitution the power of the federal government in such matters is limited to those aspects which concern interstate commerce, and if a state fails to do its part the federal government can not step in and carry on the work. What the federal government can do in such a case, however, is to quarantine

the state or a portion of it and thus prevent the movement of animals from such a state, but while this action would protect other states it would not help the situation within the state.

### BENEFITS OF ERADICATION.

The economic advantages of eradicating tuberculosis from farm animals are too apparent to require extended discussion. They will come to the individual stock raiser and dairyman as well as to the public and the nation. Breeders are beginning to understand that it is unprofitable to go on raising cattle while tuberculosis exists in their herds. The practice is becoming more general for buyers of breeding and dairying cattle to have such animals tested before placing them in their herds, and the breeder who can give assurance that his herd is free from tuberculosis has a decided advantage in making sales. With the agitation in favor of a more wholesome milk supply there is coming a growing demand for milk from healthy herds at higher prices and as this demand increases the dairyman who cannot show a clean bill of health for his cows will find it more difficult to market his products.

To overcome the losses above mentioned is worth considerable effort and expense. The benefits to follow from the eradication of tuberculosis from farm animals are so great and so obvious that the necessary expenditures, even though they may be heavy, may be regarded as a highly profitable investment.

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THIS is my twenty-second annual subscription to the AMERICAN VETERINARY REVIEW. I could not think of getting along without that monthly visitor.—(*Geo. V. Torne, D. V. S., Thompson, Conn.*)

WHY HE WAS MAD.—Stubb—What's the trouble with the writer's husband? He looks angry enough to chew tacks. Penn—And he is. She dedicated her latest book to him. Stubb—Gracious! I should consider that a compliment. Penn—Not if you knew the title of the book. It is "Wild Animals I Have Met."—(*Chicago News.*)

## DISEASES OF CATTLE THAT MAY AFFECT THE WHOLESOMENESS OF MILK.

BY MARK WHITE, V. M. D. (UNIV. OF PENN.), DENVER, COLORADO.  
Read at the Women's Club, January 19th, 1909.

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I have been requested by the committee of medical men appointed by the Denver Medical Society, to appear here this evening in the capacity of a veterinarian and talk to you regarding diseases transmitted from the cow affecting the wholesomeness of the milk, and I shall be pleased to give you all the enlightenment within my power pertaining to this broad and important question in so short a time as I have at my disposal; if I can only cause you to appreciate the seriousness of wholesome milk just one-half as much as I do, or as the medical and veterinary profession do, I shall have been paid many times for my trouble, and be the means of saving thousands, and I may say millions, of people's lives by appearing here to-night.

I stand here to-night, not only in the capacity of a veterinarian, but as a citizen of Colorado and the beautiful city of Denver, also one who has the welfare of humanity at heart.

Milk is the most used and useful product for food; it has no substitute and there is no prospect that a substitute will be produced. At present milk is nearly as essential to the perpetuation of all the mammalian species as a parentage. Milk is the only food that is safe for the infant and the invalid. It is an essential part of the diet of all classes, at all ages, in one form or another. The consumption of milk is so universal that there is, or should be, a universal interest in the purity of the product. Milk is a most excellent medium for the growth and multiplication of germs or bacteria. There are undoubtedly many diseases transmitted from the cow by way of the milk, in the form of both pathogenic germs and toxic poisons.

The world at the present time is shedding tears for the great suffering in the people of Italy, but for every tear that is shed for those suffering people, there are a hundred shed for the sick and dying children of our American country, that are afflicted with tuberculosis presumably contracted from drinking milk from tubercular cows. Since milk is not cooked but is used for food raw, and being such a fine medium for germ multiplication and the carrier of disease, it has become the greatest and most important medical and sanitary question of the day.

It has been said by good authority that over one hundred thousand children in America are dying each year from tuberculosis contracted through the milk of tubercular cows; that more people are sick and dying from tuberculosis contracted from animal sources than from contact with man; that when contracted from cows the disease is more fatal, since the germs are stronger and thrive best in human tissue, therefore my dear citizens let us wake up to the seriousness of the hour, and take the necessary precaution against this controllable source of disease, we can, if we only want to. The state of Colorado and the city of Denver have the money, the scientific knowledge and the trained men to take up this important work at once and they are going to do it right when they do.

The dairymen are not antagonistic in the production of pure milk and are willing to produce what the public demand, and are willing to pay for. The public buy milk as they would a ton of coal, and in so doing fail to encourage the dairyman in producing wholesome milk.

In taking up the diseases of the cow which affect the wholesomeness of the milk, I shall only cover diseases of cattle which are common among our American cattle, for there are many diseases of foreign cattle which do not make their appearance in America. I shall not consider all the diseases of cows at this time, but shall only speak of those which are the most important.

First, we will consider "foot-and-mouth disease." This disease may be characterized by the eruption of blisters in the

mouth, around the feet, and between the toes, and is highly contagious among cattle. Practically all warm blooded animals contract the disease through the milk from a cow so afflicted, including man.

Second—Septicemia and Pyemia (Blood Poisoning). Neither of these diseases are brought about, strictly speaking by any specific organism, hence neither can be looked upon as a specific disease. The most important of these is pyemia, causing a break in the continuity of the protective tissue, as a wound, which affords an entrance into the tissues of the organism.

Among the different wounds may be mentioned cuts, bruises, punctures, burns, chemicals or frozen wounds and compound fractures of bones.

Injuries received during parturition, stoppage of the milk duct, infection of the umbilicus in the newly born are also frequent causes of pyemia.

Septicemia, usually follows surgical wounds, local suppuration, inflammation of the bowels or lungs; in fact, wherever there is a local lesion of any kind permitting germs to enter the blood. The symptoms of both diseases include primarily a high fever.

Third.—Anthrax, may be defined as an infectious disease which is caused by a specific bacteria, known as the anthrax bacilli, and it affects all animals, including man.

Fourth.—Rabies or Hydrophobia, is a disease pre-eminently affecting the dog race, although all warm-blooded animals, including man, are susceptible to the malady; which is always transmitted through the bite, milk or blood or flesh of a preceding case.

Fifth.—Black Leg. This disease is produced by a specific bacteria, readily distinguished from that causing Anthrax, and would of course being a toxic and feverish disease cause the cow to eliminate unwholesome milk.

Sixth.—Malignant Catarrh is an infectious disease pre-eminently involving the respiratory and digestive tract, although the sinuses of the head, the eye and the urinary and sexual organs are very frequently affected.

Seventh.—Texas Fever. This is a specific disease communicated by the cattle tick to cattle, which have just recently come off of a cow or bullock that lives in the infected Southern Fever district or else a cow or bullock which is not acclimated or immuned, that has recently been brought from the Northern country, down South to the infected premises. In other words the germ of the disease is carried from one cow to another by the tick, which inoculates the second animal by the bite, having at the time the Southern cattle fever germs in its mouth. As in the case of Southern malarial fever, which was until a few years ago thought to be due to impure water—but now we know that it is impossible to develop malarial fever without having first been bitten by a mosquito that has just recently bit a person with the disease, and that the disease does not come from the water, at all.

Eighth.—Tetanus or Lock Jaw. This disease is due to the Tetanus bacillus, which enters the animal by way of wound. The germs as, in diphtheria, do not circulate throughout the body, but the toxin secreted by the germs, does circulate throughout the system, and is eliminated in the milk, as a deadly poison.

Ninth.—Contagious and Normal Abortion. The cow's milk should not be used for a reasonable time, on account of toxic eliminations and high fever.

Tenth.—Cow Pox, is a disease which involves the skin of the udder of cows, causing blisters and pustules to form thereon.

Eleventh.—Poisons and Poisoning, which are eliminated in the milk and are poisonous to man. Arsenic, Lead, Copper, Zinc, Phosphorus, Mercury, Acids, Alkalies, Coal Oil, Carbolic Acid, Saltpetre, Common Salt, etc.

Vegetable Poisons.—Used as medicines. Opium, Strychnine, Diuretics, Food, Fungi, Loco Weed, Turpentine.

Animal Poisons.—As snake, bites, wasp, Bees and stings of insects and the Forage and Spanish Fly.

Vegetable Poisons.—As Laurel, Ergot and other poisonous plants or damaged, fermenting or spoilt foods also poisonous

plants found at pasture, are frequently eliminated by way of the cow's milk, and would of course render the milk dangerous for food.

### MILK ABNORMALITIES.

The cause of the various abnormalities are in general as follows:

1.—Food which is abnormal either in quality or quantity. The fact that such conditions occur most frequently in cattle is accounted for by their somewhat unnatural mode of feeding. 2.—Gastro-intestinal catarrh, cachetics and other bodily diseases. 3.—Diseases of the udder. 4.—Infectious (bacterial), Thermic heat, Chemical, and electrical influences acting from without the body of the cow, and are therefore of interest in this connection in provoking diseases in man and other animals.

Watery Milk.—Is distinguished by an absence of fat and casein, and an excess of water. It is bluer in color and of relatively higher specific gravity. It is caused by poor, watery food, as, for instance, an excessive or exclusive diet of mashes, turnips or tops, etc. In some cases by some bowel disorder.

Curdling Milk.—Is one of the common faults of cows' milk. The cause is varied. On one hand they arise from digestive disorders, sour food-stuff, such as sour mash; from disease of the udder, especially inflammation, from high fever and swelling in advance pregnancy; nymphomaniacal conditions; overheating of the body by excessive exercise.

Non-Buttering of Milk (Fermenting, Frothy Milk).—The cause of non-buttering, "dumb," "frothy" or "fermenting" milk are to be sought in the digestive disorders, in general disturbance or in bad and in-nutritious food, such as turnip-tops; also in udder affections such as occur at the end of pregnancy; in the affects of great heat or cold; in the presence of other faults in the milk (curdling, rancid, putrid); and, lastly, in the presence of certain micro-organisms. If the milk of a cow thus affected be mixed with that of a healthy animal, the latter milk

is always infected. Milk which will not butter, or which ferments, is the cause of much trouble in dairies and cheese factories.

**Slimy and Stringy Milk.**—In this condition the milk can be drawn out into long tough threads. It is the result of bacterial infection, but there is still some doubt as to the actual causal organism. This abnormality occurs most frequently in summer, and in dirty dairies.

Bad digestion, or feeding with rotten fodder infected with bacteria, may both be blamed.

**Soapy Milk.**—By “Soapy” milk is understood such as has a soapy taste, which never coagulates, no matter how long it stands, but precipitates as slimy sediment and gives a very frothy cream, which is extremely hard to churn into butter. The cause of this milk abnormality is bacterial.

**Blue Milk.**—Is observed mostly in spring and the height of summer, particularly during moist, warm weather and in dark dairies. In the latter it may occur year in and year out, even for ten years. On the other hand, this condition generally disappears in the colder seasons, or after the air has been cleared by heavy rain. At first only one cow gives blue milk, but soon all the cows in a dairy are infected. Very often sick cows show a predisposition to the production of blue milk.

**Red Milk.**—Like blue milk, this also is caused by the presence of bacteria. Several kinds of bacteria possess the power of turning milk red.

**Bloody Milk.**—Blood in milk can be traced to several causes. Not infrequently blood may be noticed in the milk immediately after calving, and last for about fourteen days. In other cases it may be traced to inflammation of the udder, injuries inflicted on the udder by a blow, rough milking or sucking, congestion of the udder during calving, or it may be due to the application of blistering applicants to the udder.

A cow when suffering from *any* disease or constitutional disturbance producing a fever cannot give wholesome milk.



Actinomycosis.—Also known as “big-head,” lumpy-jaw, wooden tongue, etc., is a chronic disease due to infection characterized by the formation of peculiar tumors in various organs of the body, more especially the head, and due to the specific action of a certain fungus (*Actinomyces*).

This fungus is an organism which occurs in the tissues in the form of rosettes, and it has therefore been termed the “ray fungus.”

The disease is not directly transmitted from one animal to another, but it seems apparent that the fungus is conveyed into the tissues by various foodstuffs through slight wounds of the mucous membrane of the mouth, decayed teeth, or during the shedding of the milk teeth.

The tumors and abscesses may be local in the cow's head or may be generalized or scattered throughout the whole body, as in tuberculosis. We should not look upon “lumpy jaw” as a disease of the jaw alone, for it frequently involves the entire body, including the udder.

### TUBERCULOSIS (Consumption).

This is a disease of cattle, and in fact all warm-blooded animals are affected. It will not go into this broad and important disease (which is to-day taking up more space in scientific literature than any other two diseases of both animal and man at the same time causing more worry and use of gray matter than any other disease known) but I do want to give you a short sketch of the disease in order for you to get the stampede with the rest of us, and appreciate the seriousness and importance of knowing that the milk that you give your children is from cows that the proper authorities have examined and pronounced free from the least taint of the disease. The cow ranks as the most susceptible animal to this disease. The percentage among cows so affected would probably run 10 per cent. in the United States, which is increasing alarmingly; something will have to be done by both state and national governments to check the

spread. I am of the opinion that it will not be many years until this great question will be handled at Washington and that there will not be any cows allowed to give milk for the American people that have the disease in their bodies. It will cost a great many dollars to free our American cattle of this disease, but it certainly would be the wisest and best investment that this Government could possibly make to-day. If the American people could be assured to-day that every cow furnishing milk to its people were free of tuberculosis, just so sure would the consumption of milk increase 50 per cent. by such an assurance of protection.

The American people are being educated what wholesome milk is and they are going to demand wholesome milk at any price and they must have it. The times have changed so that the dairy business is no longer looked upon as a haphazard business, but it must be conducted upon the most scientific, sanitary methods. The dairyman must know the laws of infection and sanitation, his cows must be free from the least taint of disease, his barn must be well ventilated and sanitary in every respect, with not a cow with tuberculosis. This question must be settled by having an expert test his cows at least once a year with tuberculin, for tuberculosis; throwing out of the herd all the cows that show the disease.

A cow affected with tuberculosis may or may not cough, she may or may not be poor in flesh. A cow with tuberculosis does not necessarily, fall off in her milk; she may be old or young; Jersey or Holstein; bred in Colorado or Tennessee. We find as much tuberculosis in one breed as another. Some accuse the Jersey cow of bringing the disease to this country and that they have more of the disease than either breeds of cattle, but this is not true. On the island of Jersey where the Jersey cattle come from there is not any tuberculosis among the cattle there and to prevent the disease from getting among the cattle there, they have in force a strict quarantine to prohibit any importation of cattle to the island, this cannot be said of any other country in the world.

As an illustration of the fact that cattle may be very fat and at the same time have generalized tuberculosis. Will cite you to the prize-winning steer that won at our stock show in Denver three years ago, he was of the Pollangus breed. This bullock when he was slaughtered and afterwards sold to the people of Denver for twenty-five cents per pound, showed to have had generalized tuberculosis. Same was true with a bullock that won first prize at the Chicago Stock Show a few years ago.

We know that a cow can give milk laden with the tubercular bacilli when she would not show any visible symptoms of the disease, and could give enough milk carrying the infection, to kill ten thousand children, before she herself would show any visible symptoms of the disease.

Since the milk is all mixed at the dairy, one cow in a herd with tuberculosis would infect the whole output of the dairy. For this reason it becomes very important to know that not a single cow in a herd has the disease.

It has been repeatedly shown that the milk from a cow suffering from the disease of tuberculosis, would produce the disease in each and every breed and species of animals and birds when fed to them. For this reason does it seem reasonable that your baby could drink milk laden with tubercle bacilli, without contracting the disease therefrom? No he cannot.

Science has reached the point whereby that when a child dies with tuberculosis, that a culture can be taken from that child's body. By the study of this culture it could be ascertained whether or not that child was infected with the cattle germ or the human germ. Many investigators have found as many as 50 per cent. of children that had died of tuberculosis, to be infected with the cattle tubercle bacilli.

The state of Colorado could well afford to make the necessary expense to free our cows of disease. We would have twice as many cows furnishing milk, twice as much money invested in the dairy business, twice as many people drinking twice as much

milk, making the dairy industry of the state worth twice as much money as it is at the present time.

Something must be done to keep up the confidence of the people in the wholesomeness of milk, or else the consumption of milk will gradually decrease instead of increasing, as it should.

Since Colorado has a national reputation for a natural health resort, and that we are entertaining so many sick people in our state, it becomes a very serious and important matter that we encourage these sick people to drink plenty of milk, and at the same time furnish them a wholesome product, and not add fuel to the already raging fire in their systems, by giving them milk that is teeming with a stronger tubercular germ than they now have in their bodies. It is therefore an economic as well as a public health question.

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PRECAUTION.—Invalid husband—Did the doctor say I was to take all that medicine.

Wife—Yes, dear.

Invalid husband—Why, there's enough there to kill a donkey.

Wife (anxiously)—Then you'd better not take all of it, John.—(*Tit-Bits.*)

GROOMING.—Anciently man thought more highly of his horse than of his womankind. But woman, as it chanced, was crafty.

"Why does he esteem his horse beyond his wife?" she asked herself and resolutely faced the task of finding out.

Her first answer was: "The horse will carry a heavier load."

Her next: "The horse doesn't talk back at him."

But neither of these, somehow, impressed her as being correct.

"Most likely," she declared at length, "it's in the grooming. Well, I'll just be well groomed myself and see."

It was a lucky guess, and from that time forward woman's position rose relatively until in our day the horse has scarcely a look-in even at the horse show.—(*Puck.*)

## WHY HORSES ARE OFTENER LAME IN FRONT THAN BEHIND.

BY F. C. GRENSIDE, V.S., PRESIDENT OF THE VETERINARY MEDICAL ASSOCIATION  
OF NEW YORK CITY.

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Horsemen of experience, and particularly veterinarians, have ample opportunity of observing the relative frequency of lameness in the fore and hind extremities. It does not take very extended experience to enable one to determine that lameness in the fore legs is a much more common occurrence than in the hind.

This is the case in horses used for any kind of work, but we are of the opinion that it is so, to possibly a greater degree in riding horses, than those used for any other purpose; and this being a fact it is interesting, and instructive as well as of some practical value to determine the reason why.

Veterinarians know that strain and concussion are two important factors in producing lesions, that result in lameness, and it is therefore of value to study why the fore legs show the effects of these causes to a much greater extent, than the hind ones. In the absence of regularly kept data, it would probably not be very far off the mark to state that one meets with ten cases of lameness in the fore to one in the hind legs, so that there must be some very palpable reason for this disparity in the relative frequency of the seat of lameness.

The most important factor in contributing to both strain and concussion is weight. If one asks a number of horsemen what the approximate relative proportion of weight borne by the fore and hind extremities in a horse is, it will be found that few have thought of it, and still fewer can give it.

Although subject to variation, within limited range, it is no matter what the weight of the horse is, there is a pretty definite relative proportion in the weight sustained by the fore and hind legs.

If a horse's fore feet are put on the platform of a scale and weighed, then moved off and his hind ones put on, it will be found that his fore part weighs, approximately, one-quarter more than his hind. If he is then mounted by a man weighing one hundred and fifty pounds and weighed in the way already explained, the weight of the fore part will be increased one hundred pounds, while that of the hind only fifty.

This shows plainly the much greater strain and concussion to which the fore legs are subjected, particularly in carrying weight on the back.

Nature has made provision for this to some extent, but not to a sufficient degree to prevent the effects of this greater weight showing itself, in injuries and diseases of the fore extremities more frequently than in the hind.

Propulsive effort, which is the chief function of the hind legs, is not such a fertile cause of lameness as sustaining weight. It follows then that in estimating a horse's ability to carry weight, and stand "wear and tear" in performing saddle work, that it is to the fore legs that we have to look chiefly in forming a correct conclusion. In endeavoring to come to a determination of a horse's wearing ability in his fore legs we have to study three points, viz.: the conformation of these members, the quantity of tissue in them, and the quality of the tissue of which they are made up.

The cultivated eye of the expert horseman, on taking a side and front view of a horse's fore legs, can determine at once whether they are properly balanced, or poised.

A horse's fore legs may be said to be well poised when they are so formed that the ill effects of tension and concussion are reduced to a minimum.

They should be constructed so that strain is not lessened at the expense of increased concussion and vice versa, but they should be formed so that all weight-bearing parts sustain their due proportion of weight, and all parts subjected to tension, their proper share of strain; then they may be said to be well poised.

Desirable balance is an attribute of much value in contributing to the wearing ability of a horse's fore legs, and should be well considered in estimating his weight-carrying power.

Deficiency in "timber," and defective quality of tissue are in a measure compensated for by proper poise of leg.

The more open or obtuse the angles formed by the bones that make up the foundation of the leg, the greater is the tendency to concussion, or inelasticity of step. We have three joints in the fore leg that form angles, viz.: the shoulder joint formed by the blade bone, and bone of the arm; the elbow joint, formed by the bone of the arm and those of the fore arm, and the fetlock joint, formed by the cannon bone and bones of the pastern.

The less open or obtuse these angles are, the greater the tendency to elasticity of tread, or lessened concussion, but the greater the inclination to increased tension or strain. What is to be desired, then, is the mean between these two extremes, then we have desirable balance or poise in the fore legs and mechanical advantage as far as that obtains, in lessening concussion and strain.

Although recognizing, as we must, the distinct importance of balance in the fore legs, we must not forget that there is a property possessed by some horses that compensates for in a measure imperfect poise of those members.

Lightness of step, or elasticity of movement is inherent in some horses to a degree that nullifies, in a measure, defects of formation that would otherwise be a source of weakness.

We observe this elasticity of movement in human beings, as well as in horses. People that are by no means gracefully or well built, step very lightly both in walking and dancing, which ability is undoubtedly referable to some property of the nervous system.

In addition to the formations already referred to, as influencing the balance of the legs, we have others of much importance in affecting poise. The knee joint is very frequently the

seat of malformations that influence very materially the poise of the leg. Buck knees, calf knees, knock knees, and bow legs or knees bent outwards, have much effect upon the balance of the leg. The pastern, too, is also the seat of deviations from true formation in turned in and turned out pasterns.

The axiom that "size is strength, other things being equal," is well exemplified in the fore legs of the horse.

We can begin at the feet, and find that few keen observers amongst horsemen of much experience will say that disproportionately small feet wear well, no matter how well they are shaped. It is not difficult to realize that weight, particularly in motion, when concentrated upon small bases of support, is more apt to act injuriously upon them than if those pedestals are larger. Slender pastern bones are notoriously predisposed to ringbones.

The frequent reference to the circumference of a horse's leg below the knee is an indication of the importance that is attached to the quantity of tissue in the leg. This is sometimes expressed in the misleading statement that such and such a horse has plenty of bone. The circumference of the leg below the knee is as much influenced by the development of the tendons and ligaments as by the amount of bone, so that the expression that a horse has plenty of "timber" in his legs is a more correct and rational one than that he has plenty of bone.

Quality of tissue is also of much importance in influencing a horse's ability to stand work and remain sound.

Density or good quality of bone lessens the tendency to inflammatory action in bone, and consequently to splints, ringbones, osselets and sore shins.

Horses lacking in quality have what are called soft legs, and show the effects of "wear and tear" on slight provocation. Windgalls, puffy sheaths of tendons, thickened fetlocks, cracked heels and stocked legs are some of the conditions to which horses lacking in quality of tissue are predisposed.



After dilating upon the three chief factors which contribute to a horse's ability to carry weight on the fore legs, viz. : poise of the leg, quantity and quality of the tissue of which they are made up, it may not be out of place to again emphasize the importance of careful scrutiny of these members in estimating a horse's weight-carrying power. The fore extremities being of prime importance should be studied first. This, however, is not always done. How frequently we hear people comment favorably upon a horse's weight-carrying ability that has a bulky top. A bulky body, if not well underpinned, detracts from weight-carrying power, the reason for which is obvious. The back, too, is often referred to as being of more importance than the fore legs in contributing to weight-carrying ability. Certainly the form of the back, its length and muscularity, have to be reckoned with in looking for weight-carrying power, but we much less frequently find horses showing evidence of weakness in the back than in the fore legs.

The compensating property of elasticity of movement has been referred to as lessening the injurious effects of weight on the fore legs. Relief is also afforded in other ways. High carriage of head, with nose in, and arched neck, relieves the fore extremities, particularly if the hind legs are brought well under the body in action, thus bringing the centre of gravity farther back and causing the hind legs to more fully assist the fore ones in sustaining the weight.

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USE OF BENZOATE OF SODA IN PRESERVING MEAT.—In view of the recent decision of the Board of Food and Drug Inspection of the United States Department of Agriculture relative to the use of benzoate of soda in food products, the meat-inspection regulations of the Bureau of Animal Industry have been amended so as to permit the addition of this preservative to meats and meat food products provided they bear approved labels plainly showing the presence and amount of benzoate of soda.

## BLOOD SERUM THERAPY.

BY DR. CAMERON, FEDERAL MEAT INSPECTOR.

Read before the Annual Meeting of the Veterinary Association of Manitoba, Winnipeg,  
Man., Feby. 16, 1909.

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In writing this paper I have tried to give you some of the details of more recent investigations on blood serum therapy. Its interest lies in the fact that probably all antitoxic treatments and immunization are at least in some degree dependent on knowledge and development of these substances or antibodies in the blood. The simplest idea of these processes guarding against disease is phagocytosis. In this the phagocytes or adult white blood corpuscles are overcoming and removing micro-organisms.

Phagocytic power, however, depends little on the leucocytes themselves and much on the actions of alexins or opsonins in the blood serum. For if leucocytes be taken from a tuberculous patient and also from a healthy patient, there is no difference in the number of tubercle bacilli they will ingest if placed in the same blood serum.

These opsonins so act on pathogenic organisms that the leucocytes are enabled to engulf them and so may get the better of the disease. Positive chemotaxis in which the phagocytes are apparently attracted and negative chemotaxis where they are repelled by the bacteria may show how strong the opsonic power of the blood is.

As an example: When an attenuated virus of anthrax is inoculated into an animal, it is found that the leucocytes surround the "poison" in great numbers. Whereas if a virulent culture of anthrax is injected, the inflammation is oedematous in character and only a few leucocytes are present. In the latter case the opsonins are not sufficiently powerful to prepare the bacteria for the phagocytes so they are not attracted. This is

a case of negative chemotaxis. The presence of these substances in the blood serum, although they have not been isolated, may be made quite evident. The simplest demonstration of this is the mixing of blood serum of one animal with the blood of an animal of different species. This causes the breaking up of erythrocytes or red blood corpuscles and allows the hemoglobin to escape. In this case the red cells of the one are foreign to the serum of the other. If injected into the veins of another animal, in quantity, the serum of different species may cause hæmoglobinuria and death. 14 c.c. of serum from a horse has been known to kill a dog. Now let the serum be heated to say 60°C. before injection and it is found that the power in the serum is destroyed and no evil results from the injection.

For each disease an animal may have an inherent or acquired power of antagonism. The measure of this power of opsonins is known as the opsonic index. Each disease has a different opsonin, thus although an animal has a high opsonic index for one disease, it might have a very low opsonic index for another, and the latter would be the disease it would be more susceptible to.

White blood corpuscles can be kept alive outside of the animal body, and, when in test tubes, tubercle bacilli may be added. Then if a smear is made and stained the tubercle bacilli may be seen inside the leucocytes having been ingested by them.

The strength of the opsonins in an individual may be demonstrated and so give the opsonic index for a disease. To simplify the description suppose I wish to obtain the opsonic index of my blood to tuberculosis. I take a sample of the serum of my own blood and the blood serum of another person known to be healthy and leucocytes from anyone. Into test tubes containing my own and the healthy sera are placed the leucocytes and pure cultures of tubercle bacilli. After leaving for some time the result is obtained by counting the bacilli which have been engulfed by the leucocytes. If a given number of leucocytes in my own blood have ingested say 150 tubercle bacilli and the leuco-

cytes in the healthy serum have taken up 300, then my opsonic index is as 150 to 300, that is to say one-half.

The opsonic index for some diseases can be raised by different means, thus giving immunity and in some cases a rational treatment, if the disease has been contracted. These means are in use in several instances now.

Active immunization is given by the injection of an attenuated, or weakened, virus. In this case antitoxins are developed in the serum to overcome toxins produced by the virus. The agents used for active immunization are known as vaccines and are non-fatal doses of virulent organisms. Other agents used are killed bacteria of disease and bacterial constituents. The curative properties of mallein and tuberculin, if any, belong to these agents. The use of attenuated viruses has given the best results. In passive immunization the antitoxin is injected into the blood, the antitoxin having been developed in the serum of another animal, by the use of vaccines.

There are examples of where both active and passive treatments are used together, the vaccine and antitoxin being injected at, or about, the same time in different parts of the animal's body. Vaccines are very useful in localized infections where auto-inoculation or spread of the disease in the body is withheld. Many cases of sepsis and persistent sinuses can be treated in this way and cases which have been under treatment for years have answered rapidly to vaccination.

Autogenous vaccines which are made by the escape of bacteria from localized infection, that is by auto-inoculation, stimulate the machinery of immunization and so often prevents the spread of infection from a primary focus.

Many antitoxic treatments are prevented from working well by the presence of secondary infections. Tuberculosis often has a secondary infection, Staphylococci or Streptococci. This may account for the lack of success, in some cases, of the treatment of tuberculosis by antitoxins. This applies to all contagious diseases.

Saline solutions are used in treating diseases, but their action is more of a mechanical nature. A quantity of blood may be withdrawn from an animal, this prevents congestion, and removes some of the deleterious matter which may be present. The saline solution is injected, it dilutes the blood and so changes the medium and might thus stop the growth of micro-organisms or weaken toxins present.

The disadvantages of many of these methods of overcoming disease is the amount of work entailed. But so many men are at work on these matters now, that the technique will be simplified, and, I believe, their common use is only a matter of time.

SCENE—Two country women at the London Zoo on a bank holiday looking at a bird of prey. Mary—Lor', Jimima! What a dear little heagle. Jimima—It hain't a heagle, it's a howl. Keeper (who was standing near and overheard the conversation)—I beg yer pardon, ladies, but it ain't a heagle or a howl; it's an 'awk.—(*Bit and Spur.*)

BUTCHER OBEYED ORDERS.—The following tale was recently told to his class by Professor Comstock, of Cornell, in speaking of the trials of scientists. It appears that a professor of zoology in a sister university wished to procure some trichinous pork for experiment, and went to his butcher and asked him if he ever got any measly pork.

"Sometimes," the butcher cautiously answered, "but I always throw it away."

"Well," said the professor, "the next time you have any I wish you'd send up some."

The butcher, though somewhat taken aback, said that he would. Three weeks passed, when the professor, growing impatient, visited the store.

"Haven't you found any measly pork yet?"

"Why, yes," said the butcher; "I sent up two pounds a week ago."

"Where did you send it?"

"Why, to your house, of course," said the butcher.

The professor then remembered that the preceding week he and his family had enjoyed a boiled pork dinner.—(*Rural Life.*)

## RESEARCH ON PROF. VON BEHRING'S BOVOVACCINE.

BY DR. WILFRED LELLMANN, PROFESSOR AT N. Y. UNIVERSITY.

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In September, 1907, I wrote an article on research of Professor von Behring's Bovovaccine,\* stating the results of my experiments with a number of calves. My experiments have been continued with a number of animals in order to get an idea about the duration of the immunity acquired.

In this regard my experimental work was continued with four animals; two of which (heifers) were vaccinated in the spring of 1905; the other two (bulls) were vaccinated in March, 1906. The heifers were tested with tuberculin in 1906, 1907 and 1908, and each time were found without the slightest reaction. They both are in excellent condition and still alive. They had been for quite some time in contact with tubercular animals. The two bulls, which had been in direct contact with a highly tubercular cow, by being confined for 3-4 months (October, November, December of 1906, and beginning of January, 1907), were first tested with tuberculin in June, 1907. No reaction.

In the fall of 1907 they were fed from highly virulent cultures and tested with tuberculin in the spring of 1908. No reaction.

In connection with these two vaccinated bulls, two control animals were fed from the same cultures, each getting 50 cg. of the cultures, the vaccinated bulls as well as the control animals (bull and heifer). The control animals had been tested with tuberculin prior to infection. In the spring of 1908, these two controls were again tested with tuberculin together with the vaccinated animals. Both of the controls showed reaction. The control animals were destroyed in the fall of 1908, showing tuberculosis of the mesenterial glands and also of the hepatic glands. Small tubercles in the liver were found with the control bull.

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\* Published in the September, 1907, number of the AMERICAN VETERINARY REVIEW.

In September, 1908, the two vaccinated bulls were fed again with two highly virulent cultures of bovine tubercle bacilli. At the same time, two control animals, each about a year old, were fed from the same cultures. The vaccinated animals received twice as much as the control animals, the latter getting 50 cg. each. The control animals, which had been tested prior to infection, were destroyed in January, 1909, and so were the two vaccinated bulls. The latter proved to be absolutely free from any tubercular lesions, all the organs were thoroughly examined and not a trace of tuberculosis could be found, while the control animals showed marked tubercular lesions of the mesenteric glands.

It cannot be denied that the two bovocinated bulls have shown a well developed immunity, the duration of which amounted to three years. The exposure to infection had been chosen as closely to natural conditions as possible.

As stated above, these animals had been confined to an old barn with no sanitary conditions, together with an open case of tuberculosis in a cow. Furthermore, they had been fed three times with virulent cultures.

The two cows, which were vaccinated in 1905 and which are still alive, have been tested repeatedly with tuberculin and never showed any reaction, notwithstanding the fact that for some time in 1906 and 1907 they had been in contact with tubercular animals.

My experiments have made me a firm believer in the value of bovocination. I feel further inclined to believe that the immunity acquired will last from 3-4 years, if not longer. I consider it quite probable that by using bovocaccine systematically in a herd, that means vaccinating all the young stock during the age of three weeks up to three months, and isolating them strictly until 3-4 months after the second vaccination, tuberculosis could be stamped out within a period of ten years, or to say the least, that the percentage of tuberculosis could be cut down to a very low margin. Of course, there has been no want

of professional men who have criticised bovovaccination. It is only too natural that this will happen with any new method, as one must always bear in mind that a new method will be subject to the most ardent criticism and quite often prejudice, to say nothing about personal feeling and inaccuracy.

On the other hand, bovovaccination has been indorsed by quite a number of prominent professional men, whose experiences were either based on experiments or practical use of bovovaccine. I have always made it my object to follow most strictly, whether experimentally or practically, the rules laid down by Prof. von Behring. From personal experience I know that quite a few professional men have disregarded these rules. We must take the greatest care, first in picking out perfectly healthy animals, secondly in performing the vaccination most conscientiously, and thirdly in keeping the vaccinated animals strictly isolated from tubercular animals until 3-4 months after the second vaccination under the best sanitary conditions available.

Dr. J. G. Rutherford in an article, "Control of Bovine Tuberculosis," speaks about bovovaccine, that he has nothing to say, but that the results of inoculation have been singularly confusing to him, inconclusive and discouraging, and further states that under the most favorable conditions the acquired immunity appeared to be of short duration, and any advantage which may be gained is, to Dr. Rutherford's thinking, more than offset by the danger of spreading the disease. Furthermore, he adds that according to Theobald Smith, Weber and Tirze, working under the directions of the German Imperial Health Office, reported that the udder of a cow vaccinated with human culture shed human tubercle bacilli into the milk for the period of 15 months.

I fail to see the conclusions drawn by Dr. Rutherford from these reports, as to the danger of bovovaccination in spreading the disease. I feel pretty sure that anyone who has done vaccinating carefully for nearly five years, experimentally and practically, will agree with me that there is no danger in spreading the disease by using bovovaccine in perfectly healthy animals.



Therefore I consider the conclusions of Dr. Rutherford too far fetched and I cannot free myself of the impression, that Dr. Rutherford is too much prejudiced against bovoc vaccination. I do not mean to say that bovoc vaccination could not be improved upon from a practical view. I am sure it can and will in the near future become modified in such a way that it will still increase immunity. In fact, a simplified method of bovoc vaccination has been worked on for quite some time by von Behring to the effect, whether a single dose of 5 I. E. at the first inoculation could be withstood by young animals. The results were highly satisfactory and the method is being practised to quite an extent. Of course, it must be understood that the animals to be vaccinated must be absolutely healthy and kept under the best sanitary conditions available for 3-4 months after vaccination. However, the elementary idea of the problem of gradually stamping out bovine tuberculosis is solved.

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EDITORS AMERICAN VETERINARY REVIEW.—I beg to congratulate you and your co-workers in the quality and scope of the AMERICAN VETERINARY REVIEW and trust this year may surpass all others, previous.—(*R. A. Phillips, Oklahoma City, Okla.*)

THE VACUUM CLEANER FOR COWS.—American ingenuity has exploited the French idea of the vacuum cleaner. A traveler a few years ago saw something of the kind used to clean the streets of Paris. It did away with the offensiveness of dust, and he said to himself, Why cannot this be applied to American houses? The idea was carried out, and since then rivals of the original invention have appeared on the market, one of them being reduced in size so that it can be pumped with a handle or run like a small electric fan. A man in California invented a new nozzle attachment which he used for currying his horse. It was tried with cattle and found to remove lice and all other impurities, and now an order has come for vacuum cleaners for the herd of a large ranch, and another from one of the largest dairies in the West.—(*New York Press.*)

## TREATMENT OF MANGE IN THE VARIOUS ANIMALS.

BY DR. JAMES C. BUTCHER, VETERINARIAN IN BUREAU OF ANIMAL INDUSTRY.

Presented to the 26th Annual Meeting of the Ohio State Veterinary Medical Association.

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It is with a great deal of pleasure, I assure you, that I take up the consideration of this important subject and more especially since reading recent issues of our scientific journals—for some have demonstrated a valuable clinic of spasms in all degrees, and Oh! how the poor things must have suffered!

Without exception, all seemed to have about as much of a scientific idea of the subject as did the ladies who hired the horse of a liveryman and went out for a drive. A shower overtook them on the homeward journey and they were met by a man who thought it queer that one of the ladies should be holding the umbrella over the horse instead of themselves and he made inquiry as to the reason. The reply was, "Well, we were told by the liveryman that the horse was perfectly gentle—but that if it got the rein under its tail it would run away."

But now to my subject: In the first place I desire to say that I am not or will not attempt to give a scientific study of all the various headings of the subject—as: an extensive list of the mites, etc., but rather will attempt to make one phase of the subject more pleasant, in that I will try and make treatment more effective. There is no question but that Mange is looked on as a sort of bugbear in practice, and if I can make treatment of it more effective and at the same time less discouraging my object will have been attained.

I consider the life history of the mange mite an important subject and a thorough knowledge of it must be kept in mind for treatment to be effective. A mere mention of the fact that the disease may be diagnosed in from ten to fifteen days from the

time of infection and that the mites reach the stage of reproduction in from twelve to fifteen days will aid us in understanding at once the various suggestions that will follow. We must also keep constantly in mind the exceedingly contagious nature of mange—so that we ourselves will not be guilty of acting as the intermediate agent or carrier of the mites.

Other things—many in number may be mentioned—we find the disease in emaciated animals, or those with impaired function, and consequently having little exudates or oily substance in the epidermis. Were it not for the uncared for animals on the ranges in the great west—that is those cattle living solely on the ranges—without other food and which readily become infected—after exposure, it would be an easy matter to free the great plains of the pest.

We must also remember that in no place in all our routine of practice will thorough disinfection give as gratifying results as in the treatment of mange. In fact unless we intend to accompany treatment with thorough care and hygienic surroundings we may as well not begin.

Another point equally important is: that treatment of all exposed animals is very necessary. To illustrate: you are familiar with the fact that to exterminate glanders in horses it is necessary to kill all animals showing infection. Some of those horses, if left alone, would work along with but slight inconvenience for a number of years, yet in that time they would infect and destroy a large number of other horses. So in the treatment of mange; one animal that is in good condition and having good care and feed will harbor mites for weeks or even months without showing symptoms of the disease, yet will re-infect an animal that is in a weakened condition from a previous attack.

When we come to the subject of treatment we must remember that a large quantity of the remedial agent will be needed so that we must resolve the chemicals used into their most useful state.

I cannot better illustrate this than to give you the formula commonly used by the Department of Agriculture, and the method used in preparing same.

**R**

Flowers sulphur ..... 25 lbs.

Unslacked lime ..... 12 lbs.

Water, q.s., ft. .... 100 gallons.

To prepare: Slack lime; thoroughly mix sulphur with lime, adding sufficient water to form a thin paste; have container, with water in sufficient quantity; to the water add lime and sulphur. Boil for two hours, or until all particles are dissolved, stirring at times to prevent burning. Allow solution to cool, and all sediment to collect in bottom of container, then draw off all of solution except sediment, measure same to get proportions and add water q.s. ft. original amount. By this method we have both the lime and sulphur in solution and a much more effective germicide than either alone, as well as having a solution that is much more economical and far better to apply than the original substances. We can easily have the solution twenty times the strength needed and give directions for its preparation when prescribing.

To treat animal: have solution at temperature of 105 degrees and keep it at that point. Have animal in comfortable place to prevent chilling. (If an outbreak occurs among large animals, build a vat sufficiently large to swim animal.) Thoroughly saturate all infected as well as all exposed animals.

Separate animals infected from those exposed, after dipping, and give those infected a second dipping between the 10th and 15th day, from the date of 1st dipping. This, in brief, is the method of procedure and will be found most effective, with most forms of mange.

In conclusion, and aside from my subject, let me add—that I hope that the spirit of the recent holiday season will linger round you during your deliberations in Ohio's fair capitol city. I hope to meet with you again ere many of your annual meetings come and go and you may be assured of my best wishes for a great meeting and for a successful year for all and God's blessing on you in yours—the noblest profession in the world.

## REPORTS OF CASES.

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*"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."*

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### REMARKABLE RECOVERY FOLLOWING OPERATION OF TENOTOMY.\*

By Dr. W. E. MARTIN.

Last July I received a postcard requesting me to visit a farm 14 miles west of the city. It stated that a lame horse needed my services. Upon arrival at the farm my client took me to where several plows were working; I had no difficulty in distinguishing my patient from a distance. She was working with the other horses in a plow, and exceedingly lame in the near foreleg. When we had approached near enough to observe the exact condition of the animal, I found her to be a bay mare weighing 1,300 lbs., aged 11 years, of the ordinary farm type. Upon examination I found the following pathological conditions. Both flexor tendons very much contracted, so much so that upon digital manipulation they felt as hard as bone, there was complete fibrous ankylosis of the upper pastern and all the phalanges. The pastern was at an angle of about 45 degrees, inclined in a backward direction, the hoof resting on the toe (complete volar flexion). During progression the mare landed on the point of the toe, then rolled over on to the anterior part of the fetlock, wearing away the skin, the part had been fortified by the formation of a horny pad. I censured the owner for committing such a flagrant act of cruelty. He thought there was no particular harm done by working her, as she could get about the pasture field without apparently suffering any pain. I considered the case altogether too bad and complicated for successful treatment, so advised her destruction. The owner thought it a great waste of valuable horseflesh to destroy her without at least trying to do something to alleviate the trouble and pressed me to operate, anything I might suggest so long as it

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\*Presented at the Annual Meeting of the Veterinary Association of Manitoba, Winnipeg Feb. 16, 1909.

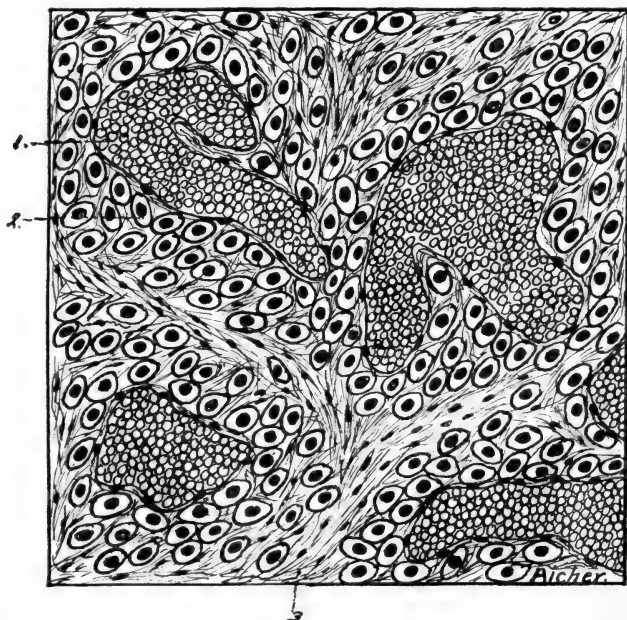
was an operation. I outlined to him what appeared to me the only operation worth considering. He accepted and agreed to run all risk incurred. The mare was sent into my hospital, and prepared for operation. I decided to first sever the perforans tendon and note the result. After shaving off the hair and rendering the part aseptic, a tenotomy knife was inserted and the tendon severed in the usual manner, the result was nil. I then reinserted the knife and severed the perforatus, but the cut ends of the tendons did not separate. Forcible extension was next resorted to, which caused the adhesions between the tendons and their sheaths to give way. We now had a gap of about two inches between the cut ends of the tendons, but the mare still walked on the anterior wall surface of the hoof and fetlock. No amount of extension and exercise would increase the space between the cut ends of tendons. This was continued for three days without improvement. I now decided to endeavor to break down the adhesions which had immobilized the fetlock and phalanges. The mare was placed on the operating table, chloroform anesthesia produced, two wooden splints were firmly strapped to the leg, extending from the elbow and forearm down to the distal extremity of the metacarpal bone, and the limb securely fastened to the table. A rope was tied around the hoof, brought back on the median plane of the sole and through, and then tied to a loop in the end of a piece of iron which had been welded on to the shoe. This piece of iron, about eight inches in length, made a powerful lever. When all was ready I stationed myself in a suitable position, where I was enabled to manipulate the parts, while the combined efforts of three men steadily pulling on the rope steadily caused the adhesions to gradually give way. The pull was continued with less force, until the foot could be taken well forward in extension, a few slight lateral adhesions that remained were broken down by grasping the foot with my hands and twisting it in either direction. The sounds emitted during the stretching and snapping of the adventitious tissues resembled very much the cracking and breaking of dry sticks. When the effects of the anesthetic had passed away, we were gratified to find that my patient could put weight on the limb, although very lame. The after treatment consisted of cold water bandages. She was exercised for fifteen minutes at a time three times a day. A spur three inches in length was welded on the toe of the shoe, this spur was slightly turned up at the point. The object of the

spur was to prevent the mare from elevating the heels and standing on the toe. There was not at any time any swelling. The mare steadily improved, and in two weeks she left the hospital and was conveyed home in a wagon. I saw her last month and was surprised to find that she had been working for three months perfectly sound.

### HÆMENDOTHELIOMA—BRAIN OF HORSE.

By B. F. KAUPP, B.S., D.V.S., Pathologist, Veterinary Department, Colorado Agricultural College.

Endothelioma of the brain is not supposed to be common in the horse. The cells forming the new growth arise from the



HÆMENDOLTHELIOMA; CHOROID PLEXUS-HORSE.

1. Blood vessel filled with cells.
2. Concentric rows of Endothelial cells.
3. Connective Tissue.

endothelial cells of the serous membrane or from vessels. Keene divides endotheliomata into four kinds, as follows: 1—Hæmendothelioma arising from blood vessels. 2—Lymphendothelioma

from lymph vessels. 3—Perithelioma from cellular overgrowth of the perivascular sheaths of the small vessels. 4—Dura-endothelioma from the membranes of the brain and spinal cord. The latter are often called psammoma, or so-called sand tumors. These contain patches filtrated with lime salts. The one here described and illustrated belongs to the first class. According to the classification given by Delafield and Prudden those originating from the endothelial cells of blood vessels are called hemangio-endothelioma, those from lymph vessels lymphendothelioma.

In the human pia-arachnoid endotheliomata are reported. The new growth is usually roundish in outline and from the meninges penetrates the brain substance by means of fibrous bands projecting inward from the pia mater. The writer has made a study of one of this kind. The cerebellum from a boy seventeen years old was sent to the laboratory for diagnosis, with the history of dullness, some days fever, and again normal. Finally weak and unable to move, the patient became confined to his bed. Toward the last came spells of inability to breathe. No pain or other functional disturbance was complained of by the patient. Respirations ceased for a considerable time before the heart finally stopped beating. The attending physician had made a diagnosis of pressure on the floor of the fourth ventricle over the respiratory centre, probably due to new growth. The diagnosis was right. A new growth involving the roof of the fourth ventricle the size of a pea was found. Upon section it was found to be of a similar variety of endotheliomata as the one here described in the horse.

Endothelioma are recorded as having their origin in the brain substance. Some of these tumors somewhat resemble certain forms of epithelioma and have often been described as primary carcinomata. The characters vary. Sometimes a tumor is formed of densely packed masses of flattened cells with little fibrous stroma. Sometimes it is lobulated with considerable dense stroma in narrow or broad bands. Some are formed of cuboidal cells grouped around blood vessels. Again they may be packed in dense masses either around a central mass or blood vessel.

The subject of this report was a black gelding, perhaps twenty years old and destroyed for dissection purposes. Upon opening the right lateral ventricle, while demonstrating the various parts of the brain, a new growth, whitish in color and about the size of a pea was observed. Upon close examination it was



found to involve a choroid plexus. The neoplasm was preserved and sectioned. A study of the sections revealed the fact that it was a hæmendothelioma. The accompanying drawing is from a field showing the grouping of endothelial cells around the blood vessels.

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## AN EQUINE HERMAPHRODITE.\*

By Dr. S. P. SMITH, Cando, N. D.

The subject to be considered was a foal, being the offspring of a draft stallion and an Indian pony.

May 20, 1903, the owner of this unnatural animal came to me for advice, stating that he had a foal twenty-four hours old which had no visible urinary tract, presenting only a fullness of the skin at the normal location of the vulva. I advised him to make an incision through the skin at the ischial arch, which he did and informed me later that there was a protrusion of flesh through the lips of the incision and it was able to micturate, passing urine through the superior commissure of the incision, which gave it immediate relief.

I concluded that the protruding tissue was only an eversion of the inflamed clitoris and would disappear of its own accord.

The animal was lost sight of until June 10, 1906, when the owner informed me that it had become unmanageable showing the instinct of both male and female.

I made a clinical examination of this animal and found the following abnormal conditions to exist. Two well-developed testicles in their respective external inguinal rings, absence of scrotum with well-developed mammary glands and an excess smegma accumulated along the medium line of the udder. Posteriorly the corpora cavernosa of the penis projected several inches through the inferior commissure of the unnatural vulva, the urethra and superior portion of the organ were absent as well as the clitoris. The urethra was the same as that of normal female except for its thickened walls and increased length. The general appearance of this animal was that of a male.

June 20, this animal was cast for operation and after the inguinal regions were thoroughly disinfected, an incision was

\* Read before a Meeting of the North Dakota Veterinary Association.

made through the skin about three inches posterior to the external inguinal ring, breaking down the subcutaneous tissues with the fingers, exposing the testicle which was removed with the emasculator after which the other was likewise dealt with. From a microscopical examination they were normal in morphology and their histological structure.

The posterior parts being disinfected, the protruding corpora cavernosa was dissected back close to its origin, and a portion about ten inches in length was amputated, ligating the convoluted blood vessels. The dissection of this tissue left a pocket which was lanced at its base to perfect temporary drainage for the wound secretion.

These wounds were dressed daily with a 5 per cent. solution of lysol and iodoform boracic acid dressing or dusting powder.

Granulation took place very rapidly and after sixteen days the wounds were entirely healed and the animal turned to pasture.

A month later this animal was found dead in pasture; an examination revealed that death was caused by a stroke of lightning; this gave me a chance to make a complete examination of the remaining generative organs. The vagina, uterus and fallopian tubes were normal. The ovaries were in the normal position, but rudimentary and very hard in texture. The severed ends of the vas deferens and spermatic cord lay close to the internal inguinal ring. The vas deferens taking their natural course inflected posteriorly above the bladder and beneath the vagina until they reached the urethra beneath the rudimentary prostate gland and vesiculæ seminales, joining the urethra just anterior to its passing through the vaginal wall.

There being no perceptible pathological lesions present or abnormalities of the rest of the organs of the body indicating that the animal had made a complete recovery from the operation.

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### ANTITETANIC SERUM IN LARGE DOSES.

By J. ELMER RYDER, D.V.S., Professor of Clinical Medicine, New York—American Veterinary College.

Chestnut mare, eight years old, fourteen hands two inches high, weight 850 pounds. Was called on Thursday, February

25, 1909; history as follows: While riding on Sunday, February 14, mare struck her off fore quarter, causing a wound about three-quarters of an inch long and a half-inch deep; this wound did well and at this time cicatrization was about complete, but showed considerable soreness upon pressure.

Symptoms—Temperature 104, pulse 68 (small), respiration 60, head elevated, nose extended, trismus of the muscles of the face and cheeks, protrusion of the membrana nictitans upon the least excitement, entire body stiff and rigid, standing with hind legs wide apart and tail elevated and trembling, when moved did so with difficulty and as a solid piece. Diagnosis—Tetanus. Diagnosis confirmed by Drs. Grenside and Bretherton.

Treatment—February 25, 5 p. m., injected 60 c.c. antitetanic serum. February 26, 8 a. m., all general symptoms improved seventy-five per cent., temperature 101, pulse 48, respiration 28, was down four hours during the night and ate three quarts of steamed oats and bran for breakfast. Injected 30 c.c. antitetanic serum; 4 p. m., general symptoms still improving, temperature 104, pulse 48, respiration 20, ate two quarts for lunch. Injected 30 c.c. antitetanic serum; 6 p. m., all symptoms good, but mare very dull, head dropped, eyes partly closed, no excitement. February 27, 8 a. m., temperature, pulse and respiration normal, all general symptoms good. 12 noon, mare apparently well. Injected 30 c.c. antitetanic serum; 4 p. m., with the exception of extreme dullness mare seemed perfectly well. February 28, noon, all symptoms normal and general condition good. Injected 15 c.c. antitetanic serum. March 1, normal, no treatment. March 2, half an hour walking exercise. March 3, one hour walking exercise. This exercise was continued until March 11, when she was returned to regular work.

This is the fourth case of tetanus that I have treated with antitetanic serum in large doses, repeating them as often as the symptoms demanded, and the third recovery. The point upon which the successful result of treatment depends is, I believe, the largeness of the doses used. In the average size horse the first injection should be from 90 to 120 c.c. and repeated in six hours if necessary.

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## RAPID RECOVERY FOLLOWING OPERATION OF LITHOTOMY.

By Dr. E. S. FRY, Veterinarian, Naperville, Ill.

On December 28, 1908, I was called to see a gray Percheron gelding coming two years old this spring. The owner called my attention to the fact that during the greater part of the summer of 1908 and ever since, the colt's legs were continuously wet. At the above-mentioned date his legs were scaly, due to irritation of the urine.

Urine was dripping at time of my visit and upon making a rectal examination I found a calculus at the neck of the bladder.

Surgical removal was the treatment recommended and the operation was to be performed as soon as the weather was favorable.

January 12, 1909, was the date of operation. Means of control—twitch and side line. Local anesthesia was used on skin over seat of operation.

A catheter was inserted into the urethra. An incision about two and one-half inches long was made through skin and different tissues a little to the side of the median line. The next incision was made a little to the opposite side of the median line through urethra on to catheter. The catheter was then withdrawn to the bottom of wound in urethra and calculus, which was  $5 \times 4\frac{1}{2}$  inches in circumference, was removed with forceps.

The catheter was then pushed up into the neck of bladder and urethra stitched over catheter with carbolized catgut. The outer wound was stitched with silk.

Antiseptic treatment was applied to the external wound three times daily, which healed by first intention.

Following the operation there was no constitutional disturbances; no loss of appetite; no swelling over seat of operation and animal seemed to suffer no inconvenience as a result of the operation.

The animal urinated through the normal channel and never once through the incised wound.

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## RECOVERY FROM SECOND ATTACK OF TETANUS.

By ALFRED F. BOLLINGER, D.V.S., Brooklyn, N. Y.

Early in January I was called to see Kismuth S., a sorrel pacer, owned by Mr. D., of Blythburne, 23 years old, being foaled in 1886, and found him suffering from tetanus; the dis-

ease being well marked. Informed owner, who in turn informed me that this was his second attack. This horse made his mark in '93. Shortly after, when eight years of age, he picked up a nail, and developed lockjaw. He was successfully treated by Dr. Sheppard of Sheepshead Bay. My treatment of the second attack consisted of carbolic acid and iodine, each 5 drops in water  $\mathfrak{J}$ ii hypodermically once a day. Sodium bromide in drinking water; treatment continued for fifteen days, recovery complete in twenty days. I neglected to state, the germ gained access through a wound on inside of lower lip, which was entirely healed at time of my first visit.

"DID your husband ever bet on a winning horse?" "Oh, yes," answered young Mrs. Torkins. "All the horses Charley bets on win at some time or another."—(*Washington Star*.)

MICHIGAN AND MARYLAND RELEASED FROM FOOT-AND-MOUTH DISEASE QUARANTINE.—The federal quarantine on account of foot-and-mouth disease has been entirely removed from the states of Michigan and Maryland, no cases of the disease having been found in those states since early in December. The quarantine on certain portions of New York and Pennsylvania remains in effect, but covers only the particular townships in which the disease existed together with certain adjoining townships. Live stock, hides, skins, hoofs, etc., may be moved interstate from the quarantined portions of New York and Pennsylvania, however, upon certain conditions with the permission of the United States Department of Agriculture.

PAN-AFRICAN VETERINARY CONFERENCE.—The recent South African Veterinary Conference at Pretoria in the Transvaal was attended by delegates from all parts of the sub-continent, even Madagascar and the Congo. The conference lasted for three days and the scope and character of the deliberations of the delegates give unmistakable evidence of organization and able leadership. United action on the part of all the colonies in the matter of the extermination of animal scourges, which have handicapped South Africa for years, is the policy determined upon. Lengthy and interesting accounts of the conference and its doings appear in the *Rand Daily Mail*, Johannesburg, January 13, 14 and 15, 1909, and in *The Transvaal Leader* of January 16, 1909.

## ARMY VETERINARY DEPARTMENT.

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### THE U. S. ARMY VETERINARY BILL DEAD.

As predicted in the last issue of the *AMERICAN VETERINARY REVIEW*, the bill "To increase the efficiency of the Veterinary Service of the U. S. Army," has failed to pass the House of Representatives. This means the death of a veterinary bill which was launched in good unison by the veterinarians of the army in 1904; which was afterwards altered by the General Staff, U. S. A., to fit the military opinion of the time, and which was fostered as an official bill of the War Department. Unfortunately, the bill, as it emerged from the offices in Washington, soon aroused the antagonism of the younger veterinarians by apparently favoring the older veterinarians with over fifteen years of service and by an "eliminating clause" applying also to those younger veterinarians who may have failed of reappointment, provisions which threatened to disrupt the good feeling previously existing among all army veterinarians.

For four years the pages of this journal have been filled with opinions for and against this bill, and for the sake of peace and unity among ourselves, which we need more than anything else for our progress in the army, we shall abstain from further reviewing the features of this bill or the causes of its final failure. The most prominent point about it now is that it has robbed us of four years of legitimate professional development which would have taken place had this bill been promptly enacted into law in 1904 or 1905, as it should have been.

Brushing aside the unpleasant recollections of this dead bill, we must at once look ahead for some better proposition, one that will compensate us for the time lost. There can be no doubt that the army veterinary service, in spite of the obstacles encountered in our present official status, has steadily improved to a higher plan of usefulness, little as this may be known outside of the army where only complaints from us have been heard. We may frankly admit that we still have a few older or younger men among us who have preferred to go on along the path

of the old army veterinary routine, but with the infusion of new blood into our ranks new standards have developed, which have been noticed in the line of the army for some years past and are now also known to the War Department at Washington.

With this fact we can count in our new endeavors at legislation. We need no longer be bashful lest we may offend the feeling of the army by a claim or claims for a respectable army veterinary service, which shall be what it is intended to be: An economical army department, with corresponding rank and emoluments of the veterinarians holding commissions therein. If signs are true, such institution is in view. The Army Reorganization Board, meeting at Washington, has asked and received opinions and recommendations for the improvement of the veterinary service from various sources throughout the army, and while little has transpired of the result of the deliberations of this Board, or what it is likely to be, enough is known to entertain hopes that a real improvement in the veterinary service is contemplated by the War Department along with the other changes in the organization of the different branches of the army. All army veterinarians have been given a chance to have their properly indorsed recommendations officially forwarded through the hands of Dr. Walter Fraser, Fort Myer, Va., or by other channels, and while it was impossible from lack of time to reach an agreement among ourselves as regards the pertinent points to be recommended, yet some very excellent suggestions from veterinarians and interested army officers, particularly one from Capt. Cameron, 4th Cavalry, Assistant Commandant of the Cavalry School at Fort Riley, Kansas, have been promptly put before this Board.

From what is so far known, it seems appropriate and wise that we should identify ourselves with this new move in a watchful and prudent attitude. From the lessons just learned by the failure of the old bill, we should refrain from seeking personal favors for a few in the way of exemption from irksome examinations or other obligations likely to be imposed upon us by the new bill, realizing as we should that in order to gain a more responsible military position, we shall have to make a corresponding sacrifice in our present unrestricted and uncontrolled position that has so far exempted us from the periodical proof of our continued professional ability, as is the case with all other

army officers. To conclude, we can do nothing better at present than try to help this new bill along the right path by a broad-minded conception of our professional duties and obligations whenever we should have further opportunity to enlighten our military authorities on the so far ill-understood veterinary branch of our army.

OLOF SCHWARZKOPF.

INFECTIOUS ANEMIA OR SWAMP FEVER OF HORSES.—After much investigation by the Bureau of Animal Industry of the United States Department of Agriculture the cause of infectious anemia or swamp fever of horses has been definitely determined as an invisible virus which is capable of passing through the pores of the finest porcelain filter, like virus of yellow fever, hog cholera, and similar diseases. The disease is found to be most prevalent in low-lying and badly drained sections of the country, although it has been found in altitudes as high as 7,500 feet, on marshy pastures during wet seasons. It is also more prevalent in wet seasons than in dry ones, and usually makes its appearance in June and increases in frequency until October.

From experiments conducted by the Bureau it appears that the disease is more or less prevalent in Minnesota, Kansas, Nebraska, Colorado, Wyoming, Montana, North Dakota, and Texas. It begins to manifest itself by a dull, listless appearance and general weakness, the animal tiring easily, this stage being followed closely by a staggering, swaying, uncertain gait, the hindlegs being mostly affected. The temperature remains high for several days and then drops, to rise again at irregular intervals. The horse may improve for a time, but usually this temporary improvement is followed by a more severe attack than at first. The quantity of urine passed is sometimes enormous, death finally occurring from exhaustion. If uncomplicated, the infection runs a chronic course, and usually terminates fatally in from two months to a much longer period. Veterinarians in different sections report a mortality of 75 per cent. or even higher. Recovery takes place only when treatment is begun early or when the animal has a long convalescent period.

The REVIEW for November, 1908, Vol. XXXIV., page 198, contains an article by Dr. John R. Mohler, of the Bureau, describing the disease and giving treatment.



## ABSTRACTS FROM EXCHANGES.

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### ENGLISH REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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VESICAL CALCULUS IN A JACK [*Lieut. H. C. Stewart, A. V. C.*].—For the past three months, or more, the animal has been treated for retention of urine. Finally, he is laid up; is in a very debilitated condition, passed urine occasionally in drops, cloudy and blood-tinged. Temperature and respiration are normal. Catheter introduced in the urethra revealed a calculus obstructing the cervical portion of the bladder, about three-quarters of a hand's length from the anus. Operation is decided. The mule was cast, chloroformed and aseptic precautions taken. At first the animal was put on his back, but as it proved difficult to pass the catheter round the ischial arch, he then was laid on his left side and easily the instrument went in until it reached the stone. An incision was made in the perineal region with the catheter in the urethra, the incision enlarged and the calculus removed with a pair of bullet forceps. Egg-shaped, very rough, hard and apparently composed of oxalate of lime, it weighed about two ounces. The bladder was washed with boric acid and the incision closed with Lembert's sutures. Recovery was uneventful.—(*Veter. Reco.*)

VOMITING IN THE HORSE [*J. H. Parker*].—Bay gelding 17 years old, was taken three years before with vomiting that lasted one hour. During that year he had four more attacks. Then the spells became more frequent and after the last he had double pneumonia, from which he died. At the post-mortem it was found that the vomiting was due to a dilatation of the œsophagus situated close to the stomach. The walls of the œsophagus on one side was much dilated and the thickness of the organ much reduced.—(*Ibid.*)

TWIST OF THE INTESTINE: A FAMILY HISTORY [*H. Taylor, F. R. C. V. S.*].—Concise record of the case of bay mare that had colic and looked as if she was going to die; and which

she did after an illness of twenty hours' duration. The post-mortem revealed an interesting torsion. Her mother and grandmother, said the driver, had died of a similar attack and after presenting the same symptoms. It is worth noting to trace a family weakness so far back.—(*Ibidem.*)

CASE OF OBSTRUCTION IN THE GULLET OF A MARE [*Augustine Lopes, G. B. V. C.*].—Fine mare, 4 years old, in foal, is brought to a horseshow, has been classed and is standing, waiting to be judged. At that moment she was feeding on a liberal supply of grain. Suddenly she is taken with choking. Saliva flows from the mouth, countenance is anxious, and she makes violent expelling efforts by coughing. Oil is administered and returned immediately by the nostrils. An ordinary whalebone cattle probang is introduced, and, notwithstanding it is pushed in several times, no good results follow. Finally, a gum elastic catheter with a stylet being obtained and used, by turning it in gently three or four times, some little particles of the grain were made loose and removed and gradually the animal was relieved and able to compete for the prize which she carried off.—(*Veter. Record.*)

FRACTURE OF THE PELVIS [*Henry B. Eve, M. R. C. V. S.*].—Recently bought, this six-year-old mare is taken with strangles, is treated and recovered. One morning she is found cast in the box where she was let loose. She is unable to rise and has to be helped up. Apparently none the worse for her accident she is put in harness, driven a little distance and suddenly becomes dead lame. Brought to her stable, she drops down and is unable to rise. She is in great pain. With great difficulty she is put on her feet. She is very lame on the off hind leg, unable to carry weight on it. It is shorter than the other. Manipulations cause great pains and on tying a cord round the foot to assist in the extension of the leg, the mare knuckled over at the fetlock and nearly fell down. She stands with both hind feet wide apart, with the toes turned outwards. Rectal examination revealed nothing definite and no crepitation was detected. The regions of the hip joint and stifle were much swollen. Diagnosis of severe injury of the hip joint with probably complications of fracture of the acetabulum was made. Local treatment and no slings as the place was unsuitable. The mare was destroyed. Post-mortem: Severe injury of the ligamentum teres and fracture right through the symphysis pubis with displacement.—(*Veter. Record.*)

INTERESTING CASE OF HERNIA IN A MARE [Mr. T. Powell, M. R. C. V., and Prof. Hobday, F. R. C. V. S.].—The photo of a mare, well-bred poney, which had had a foal. The ventral hernia was enormous and the illustration shows that it protruded on both sides of the posterior part of the abdomen. Attempt at reduction was made, but the extent of the lesions was such that it was decided to have the mare destroyed.—(*Veter. Journ.*)

MULTIPLE INTESTINAL CALCULI [C. Roberts, M. R. C. V. S.].—Aged gelding has not shown signs of illness, when he was taken with colic and died. At the post-mortem, the end of the double colon was found to be packed with oat-hair calculi varying in size from that of a marble to that of an ordinary orange. There were counted 873 of them.—(*Ibidem.*)

SOME CASTRATIONS [Lieut. A. J. Thompson, A. V. C.].—Five ponies were operated. In three, ligatures had to be applied to arrest secondary hemorrhage. All were operated with knife and actual cautery. All the cases had a raise of temperature about the end of the first week. Ligatured cases were less favorable than the others. The ponies resumed work at the end of the fortnight following the operation.—(*Ibidem.*)

TUMOR-LIKE GROWTH RESULTING FROM FAULTY DEVELOPMENT OF THE PETROUS TEMPORAL BONE IN A HORSE: SUCCESSFUL REMOVAL [H. Caulton Reeks, F. R. C. V. S.].—While attending to the stock on a farm, the author noticed a yearling filly whose head had a peculiar shape, having a growth at the base of the right ear. The owner said that it was there at birth and that by veterinary advice it had been left alone. It has grown, and is soft and fluctuating in its upper half while the lower part of it, rather movable, feels like cartilage. An exploring trocar inserted gave out more than two pints of thick, glairy deep yellow-colored fluid. Following the escape of the fluid, the skin of the upper portion of the tumor collapsed into a saucer-shaped concavity formed by the lower part, which, being hard, had to be removed. The animal was cast, adrenalin and eucaine used for local anesthetics. An incision on the skin of the upper surface of the tumor let the fluid, which had accumulated again, escape and the interior of the saucer-shaped

concavity was exposed and at its bottom were noticed the labyrinth of the ear, the snake-like convolutions of the cochlea being readily apparent. The osseous covering of the internal ear was totally wanting and the membranous portion of the labyrinth only had been developed. Anyhow, the skin was carefully dissected from round the saucer-shaped lower half of the tumor and steps taken to remove it. But as it was not cartilage, as suspected, but real bone, and as it was quite movable, its removal required a great deal of care for fear of injuring the contents of the unprotected ear. However, in using cartilage knife, bone forceps, and fine saw the growth was reduced sufficiently to leave the parts sufficiently closed and forming about the normal contour of the head. The flaps of the skin were cut to adapt themselves to the new condition of the region, powdered boric acid was used as dressing and the wound closed with interrupted sutures. With the exception of a temporary small unhealed depression which required a short attention, recovery was exempt of any special event.—(*Journ. of Comp. Pathol. and Ther.*)

DIGESTIVE POWERS OF THE OSTRICH [*R. J. Stordy, M. R. C. V. S.*].—This is a record. One-year-old bird, in poor condition, has been ill for some time, and finally died. At the post-mortem, at first in opening the glandular stomach (proventriculus) several brass cartridges fell out. On more careful examination and after opening the gizzard, there were found from both compartments III brass cartridge cases and two bullets. Many of the cartridges were worn to the size of a pea, in four only the detonators were left, while others had been but recently swallowed. It is not probable that death was due to the presence of those foreign bodies as the animal had fed well up to the time of death.—(*Journ. of Comp. Pathol. and Therap.*)

CASE OF ANTHRAX IN AN OSTRICH [*W. Robertson, M. R. C. V. S., Gov. V. Bact.*].—It has been generally supposed that ostriches, like other birds, had under natural condition immunity for anthrax. It seems not. Seven ostriches had been under observation for seven weeks. The place where they were kept was clean and no anthrax had occurred in the place for fourteen years. All the birds were feeding well. One afternoon one was noticed to be lying on the ground, quite dead, with

the head and neck twisted back over the body. Post-mortem: Blood quite fluid. Intestines congested from end to end. Mucous membranes congested with hemorrhagic areas. Spleen much enlarged. Microscopic examination of the blood show bacilli identical morphologically and by staining characteristic with those of anthrax.—(*Journ. of Comp. Pathol. and Therap.*)

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## FRENCH REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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CONTRACTION OF THE ŒSOPHAGUS DUE TO AN ABSCESS CLOSE TO THE CARDIA IN A COW [*Mr. Bitard*].—A six-year-old cow has slight tympanitis, loss of rumination, fair appetite, but painful deglutition. She is treated by an empiric. She gets worse. Deglutition is very painful, although the appetite is always very good; liquids are swallowed without difficulty. Is treated with mucilaginous drinks, honey and camphor, without results. She remains in that condition for a few days. Exploration of the throat and pharynx is negative and a catheter is introduced in the œsophagus. It goes in well until towards near the cardia when it is stopped and notwithstanding rather hard pressure it cannot be made to go farther. A smaller ball is then put in the end of the probang, as the one which is there is rather big, and after a third trial the instrument is pushed in through. However, the condition did not improve. Loud intermittent roaring developed, true violent efforts for vomiting took place and were followed by the throwing up of glairy and alimentary substance. Finally, as the cow was in good condition she was sent to the butcher. At the post-mortem, there was found an abscess back of the diaphragm at some distance from the insertion of the cardia, containing half a cup of yellowish pus without any special odor. The cause of this abscess could not be made out.—(*Prog. Veter.*)

TORSION OF THE UTERUS IN A MARE [*Mr. Magneron, Jr.*].—Mare, 6 years of age, is far advanced in pregnancy. The normal time has expired since a few days. She has violent pains, makes powerful efforts. Vaginal exploration reveals a

torsion of the uterus. The vaginal folds run from right to left. It is a complete torsion, as it is impossible to introduce the finger in the folds so as to reach the foetus. The classical treatment of rolling the animal in the sense of the torsion, to the left, is resorted to and notwithstanding great difficulty after a first turn, the arm of the operator felt less compression in the vagina. At the second turn the torsion was removed and after a short time delivery took place without further trouble.—(*Rev. Veter.*)

LOCKJAW FOLLOWING BITES OF A TIGER: RECOVERY [*Mr. Bergeon*].—At a hunting party in Indo-China, while running a deer, the hounds found themselves in the presence of a tiger. In a few seconds, four of them were killed by the feline, and the fifth, bitten on the neck, was saved only by the cries of an indigent hunter who frightened the beast away. The injured dog had only a deep muscular wound of the neck and was suffering with paralysis of the forelegs, which suggested that a lesion of the spinal cord of the cervical region existed. The wound was dressed with permanganate of potash 1/1000. The dog was made as comfortable as possible and fed with milk and soup. He seemed to improve, but after a few days he was taken with complete opisthotonos. The case looked bad and a fatal prognosis was given. Nevertheless, the dog continued to lap his milk. No special treatment was prescribed. The wound gradually healed, the general condition improved and although the convalescence was long the animal made a complete recovery.—(*Rev. Veter.*)

PREMATURE FECUNDATION IN A FIVE-MONTHS-OLD HEIFER [*Mr. Janeteau*].—While going to the public watering-place, a heifer aged five months and twenty days was mounted by a bull and become pregnant. Fearing accidents at the time of parturition, she was made to abort by receiving when about two months gone a drench of wine with 10 grammes of Ergot and 40 of powdered gentian. This drench we repeated four times. The result was abortion without complications.—(*Ibidem.*)

VAGINAL GESTATION [*Mr. A. Lescure*].—This cow has had several gestations, all very regular. She is now seven months gone. One morning she is found with the water bag protruding from the vulva and yet she has shown no colic, made no expulsive efforts and she has no evidence of being a victim of trau-

matic injuries; she is about to abort. Yet fragments of the envelopes are issuing from the vulva. Exploring the vagina, the hand detects at some centimetres from the vulva, a puffy mass, slightly fluctuating, containing hard and movable substances. It is a small foetus surrounded with its envelopes, which is readily extracted. Continuing the exploration the uterine neck is found closed, as in the non-gravid uterus, and projecting in the vagina allowing the introduction of the finger and without any foetus in the cavity. The one extracted has the characters and normal development of a four months' calf. He has macerated in the amniotic fluid, remaining surrounded by the intact envelopes. Rejecting the supposition that the case was one of abortion, the author asks if it was one of real vaginal gestation, with grafting of the egg on the vaginal mucous, with normal development of the embryo up to four months, when the foetus had died, remaining three months more, when his abnormal presence being no longer supported by the vagina, the symptoms of abortion took place.—(*Rev. de Medec. Veter.*)

LAMENESS FORWARD DUE TO UNSUSPECTED FRACTURE OF VERTEBRAE [*Mr. Trintignan, Army Veterinarian*].—A tumor as big as the fist of a man is on the left side of the withers of a mare. Exploration shows pus. The abscess is evacuated of half a litre of thick creamy pus. There exists deep necrosis with purulent infiltrations. The trapezium and the mastoido-humeralis muscles are freely divided. But new fistulas are formed, notwithstanding continuous antiseptic irrigations. The mare is killed. On each side of the withers there are fistulas and abscesses running under the scapula. There is a large piece of the ligamentum nuchæ necrosed and a consolidated fracture of the spinous process of the first dorsal vertebra. The callus extends to the second vertebra.—(*Rec. de Medec. Vete. Milit. and Jour. de Zoot.*)

RARE CASE OF FRACTURE OF THE ASTRAGALUS [*By the same*].—While practising jumping over hurdles, a mare slips, makes a violent effort to save herself and can scarcely make a few steps forward. The left hind leg is slightly flexed and rests on the ground only by the toe. No crepitation is detected. There is a depression on the inside of the hock, the tibio-tarsal joint seems to have been badly sprained with rupture of the ligaments. The mare is destroyed. Œdematous swelling and hemorrhagic infiltrations are surrounding the joint. The lateral

ligaments on the inside of the hock are lacerated. The astragalus is broken into seven irregular pieces of various size and form. It has been literally crushed. The internal malleolus of the tibia is also fractured.—(*Ibidem.*)

OVERLOADED INTESTINES FOLLOWED BY RUPTURE OF THE FLOATING COLON [*Mr. O. Comte, Army Veterinarian*].—One morning this horse was suffering with colic. His look is anxious but his pains seem dull and not severe. He scrapes the floor with his forelegs now and then, looks to his flank, turns his upper lip upwards. There is slight tympanitis. Pulse is good. Soap injections, massage of the abdomen and pilocarpine are prescribed. However, the tympanitis increases and puncture of the cæcum is performed. The horse is bled, has mustard put on his abdomen, and soap injections continued. Colic remains dull, pulse still very good, but when the horse lays down he does it carefully, flexing his front legs and then slowly dropping on his hind quarters. Chloral, opium and ether give but little relief. The bowels have not moved. The animal dies during the night. At the post-mortem the abdominal cavity is found filled with fæces spread all over the intestines. All the organs are congested and on the initial portion of the floating colon are found two lacerations, eight and ten centimetres long, both surrounded with dark edges and hemorrhagic exudation. There are two others also, smaller, one about the same spot but nearer the large colon, and the other at the point of the cæcum.—(*Journ. de Zootech.*)

VOLUMINOUS EPULIS IN THE HORSE [*Mr. Lussseau*].—An aged heavy draught horse, very thin, has the right cheek much distended and from the commissure of the lips on that side there protrudes a smooth, rounded, red mass covered with mucosities. Buccal examination shows a very large tumor, occupying the entire internal face of the cheek, without adhering to it but with a wide peduncle and attached to the gum of the three first molars. It extends beyond the commissure and posteriorly reaches the posterior molars. Mastication is impossible. The amputation was made with a strong piece of wire, about one metre long, which was passed loop-like close to the gum, and surrounding the peduncle in such a manner as to embrace well the base of the growth. Drawing the wire partly out, the longest part of it was heated with a solder lamp and then pulled by the other end until part of the base was cut. Then this second



portion of the wire was heated, pulled out by the other end, and so on alternately until the section was complete. Then the base on the gum was cauterized. The animal did well. Unfortunately, died two months later and the author does not know if the growth returned or not.—(*Journ. de Zoot.*)

GENERALIZED GANGLIONARY TUBERCULOSIS IN A DOG [*Mr. L. Auger*].—The owner of this St. Germain dog wishes him to be destroyed, as he has two large goitres. Indeed, on each side of the larynx he carries a large painless tumor. But they form on each side a distinct mass which is situated a little above and also outside of the normal position of the thyroid gland. Besides, in front of the shoulders he has a tumor with the same characters, it is an adenitis of the prescapular glands. On each side of the penis the superficial inguinal glands and on the back of the hindlegs the popliteal glands are also hypertrophied. Palpation of the abdomen reveals the presence of several masses, there is no fever and the dog is not in bad condition. However, the owner wants him destroyed. At the post-mortem the submaxillary, retropharyngeal, parotid, prescapular, inguinal, popliteal, abdominal, tracheo-bronchal and sus-sternal glands were all more or less hypertrophied and in a state of caseification in various degrees. The lungs were comparatively free, having only two or three gray translucent tubercles. There were also some on the liver. All the other organs were normal.—(*Ibidem.*)

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## BELGIAN REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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UPON THE PENETRATION OF THE BACILLUS OF TUBERCULOSIS THROUGH THE INTESTINAL WALLS [*Mr. Hermans*].—This communication was made before the Academy of Medicine of Belgium.

In some conditions of experiments the tuberculosis bacilli always pass through the normal intestinal mucous of the guinea-pig.—100 of these animals (64 females and 36 males) received with the œsophageal probang, 3 centigrammes of fresh cultures in intimate emulsion with 5 c. c. of physiologic water. The ani-

mals had nothing to eat previous to the operation and the fasting was kept up after. Three weeks later three of the pigs died and presented bacilli in the mesenteric glands. One of the other pigs was lost. Of the 96 remaining which were submitted to the test of tuberculin, 90 reacted. All the females that were pregnant at the time of the tuberculation, aborted of fœtuses more or less developed or had premature delivery of living little ones. One year after the absorption of the culture all the animals, except one, had died with generalized tuberculosis. Liver, spleen and lungs, stomach and kidneys were all found diseased. The intestines affected to less extent in 28 cases. The last living animal was finally killed and exhibited tuberculous lesions of the intestines, liver and spleen.

In all the cases, the mesenteric lymphatic glands had tuberculous lesions and in the very rare cases where these could not be detected, frosts of their substance revealed tuberculous bacilli under the microscope. The little pigs, born during the experiment were also examined and lesions containing tubercular bacilli were found in the liver of two twins. Conclusions: 1st—In normal guinea pigs with empty stomach, humane tuberculous bacilli given in emulsion with physiologic water, always pass through the intestinal walls and reach the corresponding mesenteric glands. 2d—The penetration may take place on the small or large intestines, but does not seem to occur through the mucous of the stomach. 3d—The bacilli invade the organism and multiply in the liver, spleen and lungs and occasionally, though later, may produce intestinal lesions. 4th—Tuberculin is a powerful abortive with pregnant and tuberculous guinea pigs. 5th—The two cases of hereditary tuberculosis observed do not justify a conclusion as to this mode of propagation in man.—(*Bulletin Académ. de Medec. Belgiq.*)

CO-EXISTENCE OF RACHITISM IN SWINE AND BOVINES: A SYMPTOM LITTLE KNOWN OF RACHITISM AND OSTEOMALACIA IN BOVINES [*Prof. Lienaux*].—In a farm where either disease has not been known to exist for years, some thirty bovines are kept. Five two-year-old bulls have become lame at short intervals of time, towards the end of the winter and during the period of stabulation. The lameness exists in several legs, almost all have hard and painful swellings of the lower part of the forearm and occupying principally, the internal face of the region. Similar swellings are also found on the fore and hind

fetlocks, localized on the inferior extremity of the canon bones. While three of the animals are not very lame, one lays down altogether since several days and refuses to rise. When forced to get up, he is unable to stand, and at the point of the hocks one can feel a solution of continuity in the structure of the *Tendó Achillis*. There is a true desinsertion of the tendon, and as the animal is killed at once the tendon of the bifemoro-calcaneus is found loose from its insertion to the os calcis, while that of the perforatus still in place is only very thin and worn off. Another bull was also very lame and in a very bad condition. Having inquired as to the condition of the health of the pigs kept on the place, Prof. Lienaux found that two of them were sick and lame, having epiphysar enlargements and articular deformities. The other bulls and pigs were suffering with the same infection. Hygienic treatment and appropriate regime were prescribed. Three of the bulls improved. The fourth one, that was in such bad condition, broke down at the hock with the same desinsertion of the bifemoro-calcaneus, a symptom certainly known but to the presence of which attention has not been called sufficiently.—(*Annal. de Bruxel.*)

ACTINOMYCOSIS IN A HORSE—SUB-CUTANEOUS NODULES ON THE FACE.—SUB-GLOSSAL ADENOMA [*By the same*].—To have an enlarged sub-glossal gland removed this horse was brought to the writer. The gland is as big as two fists brought together. It is hard, fibrous, and has several openings from which escapes a little white pus. This condition has been diagnosed as a sequela of strangles. However, the horse carries besides, on the right half of the face a number of little tumors, varying in size from that of a pea to that of a hazel nut. They are sub-cutaneous, hard, elastic or exceptionally fluctuating. They do not adhere to the skin nor to the surrounding tissues. Some twenty in number, they are spread between the right eye and nostril alongside the veins of the region. One of them is incised and it shows in the centre some pus, white and creamy, and round it firm tissue with yellow granulations. The trouble is not glanders nor tuberculosis, there are no bacilli of Koch, none of glanders, no staphylococcus, streptococcus or bacilli of Preisz. Further examination revealed the nature, it is actinomycosis. The sub-glossal swelling is too large to expect its reduction with the Iodide treatment. It is removed. The

nodules of the face were open, cureted, cauterized and dressed with corrosive powder. Recovery.—(*Annals de Belgiq.*)

CONTRIBUTION TO THE TREATMENT OF TETANUS IN BOVINES [*Charles Tyvaert*].—The interesting record of recoveries from tetanus in two cows, one following a punctured wound of the foot and the other without apparent traumatic cause. Both animals recovered; the first in 21 days and the second in 7. The treatment was as follows: Quietness in a dark stall. Food consisting of bran and common salt. Puncture of the rumen with the trocar left in place for a length of time varying according the condition of the animal. Feeding through the rumen with funnel. Medical treatment consisted in infusion of pulverized gentian root with sulphate of soda, naphthaline, nitrate of potash and chloral hydrate.—(*Annals. de Belg.*)

THE TRUTH.—“See here. That horse you sold me runs away, kicks, bites, strikes and tries to tear down the stable at night. You told me that if I got him once I wouldn't part with him for \$1,000.”

“Well, you won't.”—(*Lutheran Observer.*)

AN UNPARDONABLE OFFENSE.—Miss Smart Set—What has become of Celestine, your maid? Mrs. De Smythe—I had to discharge her. She had no proper consideration for my poor Fido. Miss Smart Set—Why, I always thought she took exceptional care of the pet. Mrs. De Smythe—So did I till I found she was using her own comb on his hair without first sterilizing it.—(*London Telegraph.*)

MODERN REQUIREMENTS.—“Have you thrown the cow into the antiseptic tank?”

“Yes.”

“Have you washed the can with carbolic acid solution?”

“I have.”

“Have you plunged into the germ-destroying bath, yourself?”

“Certainly.”

“All right. Go ahead now and take the cow into the airtight glass cage, but keep on the lookout that no stray bacteria gets into the milk.”—(*Bohemian.*)

## OBITUARY.

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### SIDNEY L. HUNTER, V. S.

With deep sorrow we chronicle the sad death of our late associate and esteemed friend, Dr. Sidney L. Hunter, 2d Field Artillery, U. S. Army. His death occurred at San Diego, California, on the 27th day of February, 1908, where he was spending the winter upon sick leave, which was granted him on account of his poor health resulting from Bright's disease, from which he has been a sufferer for a number of years. His death, though sudden, was not unexpected to those who knew him and were aware of his condition.

Dr. Hunter was born March 13, 1858, at Hector, Schuyler County, New York, was educated in the public schools of Watkins, N. Y., and taught school for a number of years, and entered the Ontario Veterinary College in October, 1885, and was graduated in March, 1887, after which he practised in Bath, New York, until August, 1890, he was appointed to the Quartermasters' Department of the U. S. Army and sent to Fort Leavenworth, Kansas, where he held the position of Assistant Instructor in Hippology at the Infantry and Cavalry School, where he served until July, 1900, when he passed the Army examination for appointment to the regular service, standing first in the list of candidates appointed at that time. After appointment, he was sent to the Philippines, where he served six months and was ordered back to Leavenworth as an instructor in the Infantry and Cavalry School (now school of the line) and also placed upon the Army examining board to examine candidates for the Army, upon which board he served a number of years. He filled the position of instructor in the service school at Fort Leavenworth, Kas., up to the time of his death. He was an honorary graduate of the Kansas City Veterinary College and has been an instructor of this college for the past ten years, going from his station at Fort Leavenworth once or twice weekly to give his lectures at the school; member of the American Veterinary Medical Association; member of the Masonic Order, and in the latter he had received the work to the

32d degree, and was appointed and served two years as District Deputy Grand Master, but was forced to resign this office on account of failing health.

In appreciation of the esteem in which he was held at the Service School of Fort Leavenworth, all duties were suspended on the day of his funeral and the officers on duty at the school attended in a body, and Company "E," 13th Infantry, fired a salute at the grave and the band of the 13th Infantry led the procession. So he was given full military honors at his burial, and in addition the members of Hancock Masonic Lodge of Fort Leavenworth (No. 311) took charge of the funeral services and buried him according to the rites of the order.

In his death the profession loses one of its ablest men and one we can ill afford to spare.

He was a devoted husband and kindest of fathers and his death is a severe blow to his family, which consists of a wife and two daughters, named Mildred and Mae; and I believe that I can speak for the profession who knew him in extending our heartfelt sympathy to his bereaved family.

I believe that to Dr. Hunter the profession in the Army owes a great debt, since through his kindly manners, zeal and ability he has done so much to lift it to a higher level in the eyes of all officers who have come in contact with him throughout his long service.

C. H. J.

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## CORRESPONDENCE.

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### VETERINARIANS DECAPITATED.

SANTIAGO DE LAS VEGAS, March 14, 1909.

EDITORS AMERICAN VETERINARY REVIEW:

The new Cuban administration has taken its official *machete* and decapitated every American employee in the Department of Agriculture, among whom is your obedient servant. No suggestion of inefficiency was made.

Yours sincerely,

N. S. MAYO.

## SOCIETY MEETINGS.

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### MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

The twenty-seventh annual meeting was called to order by the President, Dr. T. G. Duff, at 1 p. m., February 2, 1909, at Hotel Downey, Lansing.

Minutes of last meeting were read and, upon motion, were duly approved.

It was moved and supported that the regular order of business be suspended for one hour, and that Rev. Jerome, of Hillsdale, an officer of the Anti-Tuberculosis Society of Michigan, and also in the National Association, be requested to address the Association.

Rev. Jerome then spoke, and gave a talk that was very much appreciated by our members. He urged the necessity of proper legal protection for the veterinarian, not only from a personal view, but as a protection to the public, especially so, as qualified veterinarians were needed to assist in eradicating tuberculosis by stamping it out in the lower animals. Mr. Jerome said that their local societies had interested themselves in the proposed amendment to the veterinary law, and had taken steps protesting its passage. He submitted the following copy of a petition that was sent to some members of the State Legislature:

“ Hillsdale, Mich., February 1, 1909.

“ Hon. L. WHITNEY WATKINS, Senator, Tenth District;

“ Hon. R. W. REYNOLDS, Representative, Hillsdale County, Lansing, Mich.:

“ GENTLEMEN—Recognizing the close relationship that must exist between veterinary practice and the general practice of medicine as applying particularly in the present and future to the prevention and eradication of tuberculosis, it is deemed a proper matter for attention and action on the part of the anti-tuberculosis organizations, local and state.

"We, therefore, members of the Hillsdale County Association for the Study and Prevention of Tuberculosis, do hereby protest against the amendment now before the Michigan Legislature, extending the time for registration of non-graduate veterinary practitioners from January 1, 1908, to January 1, 1910, being an amendment of section 4, act 244, Public Action of 1907.

"We hope you will thoroughly look into this matter, in the belief that if you do, your conclusion will coincide with the view above expressed. In that event, we trust your influence and votes will be against the proposed amendment."

Moved and supported that a hearty vote of thanks be extended to Mr. Jerome for his pleasing address, and to his society for their practical interest in the educated veterinarian. Carried.

Resuming the regular order of business, President Duff gave his address. He spoke of veterinary conditions, and said from his viewpoint there had not been much change. Foot-and-mouth disease had invaded our state, and would receive proper notice by our Committee on Diseases. Among the recommendations Dr. Duff made were the following:

That the office of Treasurer be made a separate office, as it would give us one more active officer.

That nominations for offices be referred to the Executive Committee.

That a delegate be appointed to represent our Association at the A. V. M. A. meeting.

He said that it was evident that the question of a summer meeting would be compelled to lay over for another year, as the American meeting was to be in Chicago next fall, and all Michigan veterinarians should attend. He spoke of the death of Drs. McBeth and Carr, and ordered that suitable action be taken thereon by the Committee on Resolutions.

As Prof. Marshall was unable to be present at the evening session, he was permitted to submit his portion of the report of the Committee on Diseases at this hour. The professor spoke on the latest developments in hog cholera, experimentation, and gave an interesting account of their experience with vaccination during the past year. Some of the results were most gratifying, others were the opposite. It is still in the initial stage, and it will be some time before all obstacles are surmounted.



Hon. C. A. Tyler, Secretary of the State Live Stock Sanitary Commission, also spoke along these lines, and gave his experience with the serum treatment, pro and con.

Correspondence was read from Governor Warner, Board of Trade, Saginaw, Dr. James Harrison, and other absent members, the AMERICAN VETERINARY REVIEW, and others.

Upon motion, invitation from Saginaw Board of Trade to hold our next meeting in Saginaw was referred to the Executive Committee.

Dr. Jas. Harrison, of Delhart, Texas, formerly of Maple Rapids, sent in his resignation. Dr. Harrison, being clear on the books of the Association, upon motion, resignation was accepted.

It was suggested that, as Dr. Jas. Harrison had been, while in Michigan, one of our most enthusiastic members and an ex-president, that he be made an honorary member of this Association. President referred matter to the Executive Committee.

The following gentlemen made application for membership, which were referred to the Executive Committee:

Dr. A. E. Joslyn, Pontiac. O. V. C., 1899. Vouchers, H. H. Clement and G. W. Dumphy.

Dr. Theodore Frederick Krey, Detroit. N. Y. Am., 1905, and O. V. C., 1904. Vouchers, Judson Black and S. Brenton.

Dr. L. M. Hurt, E. Lansing. Iowa State V. C., 1904. Vouchers, Judson Black and Thos. G. Duff.

Dr. Ward Giltner, E. Lansing. N. Y. State V. C., 1906. Vouchers, H. M. Gohn and R. W. McDonald.

Dr. R. Armstrong, Detroit. Det. Col. Med., V. Dept., 1897. Vouchers, J. Hawkins and F. G. Gilbank.

Dr. Chas. N. Nye, Coopersville. Det. Col. Med., V. Dept., 1897. Vouchers, J. Black and H. M. Gohn.

Dr. C. C. Shaffer, Linden. O. V. C., 1908. Vouchers, G. C. Moody and W. H. Erwin.

Dr. Thos. McAllister, Kinde. O. V. C., 1908. Vouchers, W. A. Ewalt and D. G. Sutherland.

Dr. Edward Graham Folsom, Mt. Clemens, O. V. C., 1908. Vouchers, W. A. Ewalt and Judson Black.

Dr. Jas. E. Joslin, Williamston. O. V. C., 1908. Vouchers, Geo. C. Moody and J. E. Ward.

Adjourned until 7.30 p. m.

7.30 p. m.—President Duff called the assembly to order and called for report of Executive Committee. The Secretary, speaking for the committee, reported as follows:

In regard to the question of the invitation to have our next meeting in Saginaw, after careful discussion it was recommended by the committee that the invitation be accepted.

In the matter of conferring honorary membership upon Dr. Jas. Harrison, of Delhart, Tex., it was thought it would establish an undesirable precedent, and it was therefore recommended that while we hold Dr. Harrison in highest esteem, we would recommend rejection of the proposition.

It was recommended that the following gentlemen whose applications were referred to our committee be accepted as members: Drs. A. E. Joslyn, Theodore Frederick Krey, L. M. Hurt, Ward Giltner, R. Armstrong, Chas. N. Nye, C. C. Shaffer, Thos. McAllister, and Edward Graham Folsom, and the application of Jas. E. Joslin be laid over for one year.

Moved and supported that the report of Executive Committee be received. Carried.

Moved and supported that Dr. A. E. Joslyn's application be laid on the table until to-morrow. Carried. The rules were suspended and the following were elected to membership collectively: Drs. Krey, Nye, Giltner, Hurt and Armstrong, and it was so declared by the President.

Election of officers now being in order, it was, upon motion, decided to refer the nomination of the officers to the Executive Committee.

After a session of the Executive Committee they recommended that the following names be placed in nomination for the respective officers:

For President, Drs. Robertson, Muir and George D. Gibson. For First Vice-President, Dr. D. G. Sutherland. For Second Vice-President, Dr. W. H. Erwin. For Third Vice-President, Drs. W. L. Brenton and Bellinger. For Secretary and Treasurer, Dr. Judson Black.

Moved and supported that recommendations of committee be adopted and the gentlemen named be the nominees for the respective offices. Carried.

Election was proceeded with. President appointed tellers; ballot was cast for President, with the following result: whole number votes cast, 36, of which Dr. Muir got 29, Dr. Gibson 7. Dr. Muir was declared elected.

As there was only one nominee for the office of First Vice-President, it was moved and supported that the rules be suspended and the teller cast the vote for the Association for Dr.

D. G. Sutherland. Carried. This was done, and Dr. Sutherland was declared elected.

The same method was adopted for the Second Vice-President, and Dr. W. H. Erwin was declared elected.

Ballot was cast for candidates for Third Vice-President, with the following result: whole number of votes cast, 34, of which Dr. W. L. Brenton received 24 and Dr. Hal. L. Bellinger 10. Dr. Brenton was declared elected.

Moved and supported that there being only one nominee for Secretary and Treasurer, that the rules be suspended and that Dr. J. Black receive the vote of the Association. Dr. Black was then declared elected.

The same proceeding was adopted in case of each director, and the following were declared elected:

First Director—Dr. S. Brenton, Detroit.

Second Director—Dr. Hal. L. Bellinger, Plainwell.

Third Director—Dr. Geo. D. Gibson, Adrian.

Fourth Director—Dr. A. M. Kircher, Lansing.

Fifth Director—Dr. H. M. Gohn, St. Johns.

Sixth Director—Dr. F. G. Gilbank, Detroit.

Report of Committee on Diseases was made by Dr. Z. Veldhuis (read by Secretary), on general topics covered by his investigation. Dr. H. E. States, member of committee, gave a very comprehensive, entertaining and instructive account of the recent outbreak of the foot-and-mouth disease in Michigan, and a very good history and description of the disease. Dr. Ward Giltner, M. A. C., topic was "Contagious Abortion," and he gave a historical research in connection with the troublesome disease; also the treatment and prophylactic measures to be adopted.

Adjourned until Wednesday, February 3, 9 a. m.

February 3, 9.30 a. m.—Meeting called to order by President Duff. Dr. G. C. Sutherland, on behalf of Dr. S. Brenton and the other living members of the Association, presented to the Association a beautiful silver bound and engraved gavel. Dr. Sutherland spoke of the few members that had passed on, and of the few that remained of the small band that organized the M. S. V. M. A. in Detroit in 1883.

Dr. Duff, in acknowledgment of the receipt of this beautiful remembrance from our senior members, thanked them for the emblem of authority and hoped that it would be always wielded in the cause of honor and right.

## REPORT OF COMMITTEE ON INTELLIGENCE AND EDUCATION.

Dr. Joplin, Chairman, made a general report, reading letters from Drs. Dumphy and E. A. A. Grange. He reported the conditions of the college remained unchanged since the last report.

Moved and supported that report be received and placed on file. Carried.

## COMMITTEE ON FINANCE.

Dr. Cummings reported for committee that the books, vouchers, reports, etc., of Secretary and Treasurer had been audited and everything found was correct, and with a balance of \$244.80 on hand, as reported by Secretary.

Moved and supported that report be received and filed. Carried.

Moved and supported that the bill of Roethke Floral Co., of \$12 for Dr. W. F. Carr's funeral, be allowed and paid by Treasurer. Carried.

## COMMITTEE ON RESOLUTIONS.

Drs. Deadman, Blatchford and Consaul—Dr. Deadman, Chairman, submitted the following resolutions:

"Whereas, It has pleased Almighty God to remove from our midst two of our most valued members, Dr. McBeth, of Battle Creek, and Dr. W. F. Carr, of Bay City,

"Resolved, That in their death the Michigan State Veterinary Medical Association recognize a loss of two of their most valuable and distinguished members, who zealously upheld the dignity of the profession and whose general nature endeared them to all who had the pleasure of their acquaintance;

"Resolved, That the Association extend to the bereaved families our heartfelt sympathy; be it further

"Resolved, That a copy of these resolutions be spread upon the records of this Association and a copy sent to the bereaved families.

"JOHN DEADMAN,

(Signed) "F. M. BLATCHFORD,

"F. M. CONSAUL,

"Committee."

Moved and supported resolution be adopted. Carried.

February 3, 1 p. m.—Mr. A. C. Anderson, Secretary of the Michigan Improved Live Stock Association, who was invited to be present at the meeting of our Association, spoke of the close relationship existing between his and our associations, and extended an invitation for us to join in their meeting at any time it is deemed advisable and assured the members of the M. S. V. M. A. a welcome at their meeting at any time.

Dr. Black, speaking for the members of our Association, reciprocated by extending the good will of the M. S. V. M. A. and advised a closer relationship with the Breeders' Association, and also stated that the date of our Saginaw meeting would be fixed so as not to conflict with the Breeders' annual meeting.

Moved and supported that Dr. A. E. Joslyn's application be taken up again. Carried.

Moved and supported that Dr. A. E. Joslyn's application be accepted and that he be elected to membership. Carried.

Dr. Joslyn was declared elected to membership.

Moved and supported that we elect a delegate to represent our Association at the A. V. M. A. in Chicago, and that the Association pay his hotel bills while in attendance. Carried.

Moved and supported that Dr. T. G. Duff be elected as such delegate. Carried.

Moved and supported that a selection of names to present to the Governor, from which he may select or choose a state veterinarian, be left to the Executive Committee. Motion lost.

Moved and supported that the following names be sent to the Governor, as the choice of Association, in the order named: Drs. G. W. Dumphy, H. M. Gohn, J. C. Whitney and Joseph Hawkins. Carried. Upon the suggestion of Dr. Dumphy it was, upon motion, decided that an invitation be sent to the A. V. M. A. to hold their meeting in Detroit in 1910. It was moved and supported that Art. IV., Chapter II., be changed to read "\$50" instead of "\$25." As notice of this was given at our last meeting it was carried.

The resolution to amend Art. II., Chapter VI., was laid on the table.

Dr. Gohn offered the following amendment to our by-laws, in writing: That Art. I., Chapter VII., be amended by inserting after the word "Association" in line 7, the following words, "who has been duly registered."

Dr. Gohn spoke on the subject of prosecution of illegal practitioners. It was deemed advisable to first see that our law was not mutilated by the present Legislature before any rule be adopted for prosecution.

It was moved and supported that the Executive Committee be authorized to act with the State Board in assisting in prosecutions. Carried.

Moved and supported that if funds be depleted, a special assessment be made upon the members under the direction of the Executive Committee. Carried.

Dr. S. Brenton, President, and T. F. Krey, Secretary of the Ontario Veterinary College Alumni Association, spoke, describing the aims and objects of the association.

Dr. D. S. Krull's paper on operation for Scrotal Hernia was a good, practical description of the various methods of operating. The covered operation with the wooden clamp was the one adopted by the doctor.

Moved and supported that the Secretary be allowed \$25 in addition to his salary for extra work last year. Carried.

Moved and supported that the bill to regulate stallions, discussed by Dr. Hurt, be referred to the Legislative Committee and the Committee on Diseases. Carried.

Moved and supported that the Secretary be instructed to notify the Governor of the action of this Association in selecting names to be sent to him from which he is to appoint a state veterinarian. Carried.

Dr. Duff, before handing over the new gavel to his successor, Dr. R. Muir, thanked the Association for their support and assistance to him while President.

Dr. Muir, in a few words, thanked the members for their appreciation of his efforts as a member, and the honor that they had conferred upon him by electing him to the office of President of the M. S. V. M. A.

Moved and supported that Dr. Duff be extended a vote of thanks for his efforts in behalf of the Association while President. Carried.

President Muir announced the following standing committees:

Intelligence and Education—Dr. J. C. Whitney, Hillsdale; Dr. R. F. Irwin, Alma; Dr. T. F. Krey, Detroit.

Diseases—Dr. Ward Giltner, M. A. C.; Dr. W. J. Johnson, Paw Paw; Dr. Geo. D. Gibson, Adrian.

Legislation and College—Dr. C. A. Waldron, Tecumseh; Dr. A. M. Kircher, Lansing; Dr. H. M. Gohn, St. Johns; Dr. Geo. C. Moody, Mason.

Finance—Dr. L. F. Baldock, Birmingham; Dr. W. A. Ewalt, New Haven; Dr. F. M. Blatchford, Brighton.

Clinics—Dr. T. G. Duff, St. Louis; Dr. D. G. Sutherland, Saginaw; Dr. G. H. Carter, Saginaw; Dr. Dan. Hisey, Saginaw.

Press—Dr. John Russell, Elsie; Dr. H. T. Cregan, Decatur; Dr. F. Duncan, Ithaca.

Adjournment.

JUDSON BLACK,  
Secretary.

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## MISSOURI VALLEY VETERINARY ASSOCIATION.

The semi-annual meeting was called to order at 9.45 a. m. in the New Casino, Kansas City, Mo., February 2, 1909, by First Vice-President Dr. D. M. Campbell. Dr. S. Stewart was asked to give to the organization a message from the Secretary-Treasurer, Dr. B. F. Kaupp, explaining his inability to attend. On motion of Dr. Peters it was voted to send Dr. Kaupp a message of sympathy and hope for a favorable outcome of the treatment he was undergoing. (Dr. Kaupp accidentally injured his hand while holding an autopsy on one of his experimental rabbits dead of rabies.)

The office of the Secretary for the session was filled by the election of Dr. R. F. Bourne.

On motion of Dr. Peters, reading of the minutes was dispensed with, since previous publication in the Bulletin had brought the proceedings of the Omaha meeting before the Association.

Reading of correspondence included the reading of messages from President J. I. Gibson and Secretary B. F. Kaupp of their inability to be present.

The places of absentees on the Board of Censors were filled by the appointment of Drs. Hal Simpson, A. T. Kinsley and Paul Juckniess.

The reading of papers was next taken up. Dr. A. T. Kinsley presented a paper entitled "Inflammation," which was discussed in a spirited manner by Drs. Stewart, Luckey, Jensen, Vincent, and Kinsley.

Dr. H. Jensen was then called to the chair while Dr. D. M. Campbell presented his paper on "The Treatment of Acute Inflammatory Conditions." This paper excited considerable interest and was discussed by Drs. Kinsley, Connaway, Smith, Knisely, Peters, Simpson, Warren, Lovell, Lyman, and S. Stewart.

The Association adjourned for luncheon at 12 m. and re-assembled at 1.30 p. m.

A report of the Board of Censors was called for and the following gentlemen whom they reported as favorably acted upon were elected to membership: Dr. B. H. Meinershagen, Missouri; Dr. W. I. Randall, Nebraska; Dr. Ray B. Hurd, Idaho; Dr. W. H. Saylor, Colorado; Dr. Geo. F. Jungerman, Kansas; Dr. R. R. Dykstra, Iowa; Dr. Benj. F. Davis, Wyoming.

Reading of papers was resumed and Dr. R. P. Lyman presented an interesting paper on "Equine Colics,"\* which was discussed by Drs. Warren, Knisely, S. L. Stewart, and others.

Under report of interesting cases in practice, Dr. W. Warren recited two experiences, which were discussed freely by several members.

Dr. D. F. Luckey next spoke of the present status of the Missouri Veterinary practice law and gave his ideas as to the outlook for the future in the direction of legislation. Drs. D. O. Knisely and H. Jensen were asked to give a similar outline of conditions in their respective states, Kansas and Nebraska.

"Hog Cholera Control and Eradication" was the subject of an address by Dr. J. W. Connaway. His methods and others brought up numerous questions and discussions from members.

The following papers on account of the absence of their writers were read by the Secretary:

Report of an interesting case by Dr. B. J. Baker. "Some Results of Recent Scientific Investigations," by Dr. B. F. Kaupp; "Infectious Ulceration of the Teats of Cows," by Dr. E. L. Luaces.

These papers were discussed at some length, as were the subjects of "Tetanus and Fistula," by Drs. Warren, Slater, Biart, and S. A. Peck.

The Association adjourned at 5.30 p. m. to meet in the Banquet Hall of the Coates House at 7.00 p. m.

\*Published in March REVIEW, Page 730.



Shortly after 7.00 p. m. over one hundred guests, including members, their wives, and others, assembled in the banquet hall. The dinner and the speeches which followed constituted the most enjoyable feature of the meeting.

Dr. S. Stewart acted as toastmaster. Addresses upon various phases of food and milk inspection were made by Drs. S. L. Stewart, D. M. Campbell, Frank Hall, A. T. Peters, L. Champlain, and R. P. Lyman. Two members with encores from the K. C. V. C. quartet and solos by Messrs. J. M. Lawson and S. W. Alford were greatly appreciated and added the spice of variety to the evening's program.

At 10.00 a. m., February 3d, a demonstration of various dairy methods was given by Drs. S. L. Stewart and D. M. Campbell, at the Kansas City Veterinary College. Methods of testing milk for butter fat, water and preservatives and the operation of the cream separator, together with an exhibit of good and bad dairy products filled up the forenoon with interesting work. The apparatus for those demonstrations was very kindly furnished by the John Deere Plow Company.

After luncheon, served in the college building, the clinic claimed the attention of those in attendance. Dr. F. F. Brown, who had charge, presented the following cases for diagnosis and outline of treatment:

Case No. 1.—Dr. F. F. Brown, clinician. A well-built dapple-gray horse which had been treated for tetanus about a year previously; since then had difficulty in locomotion and trouble in getting up and down. There was pronounced stiffness in gait, and a side bone in right front foot was also observed. Case diagnosed as Gonitis. No medication was offered.

Case No. 2.—Dr. R. P. Lyman, clinician. This was a large gray mare, with the following history and symptoms: Animal lies down most of the time when not in the harness. When driving stumbles in gait. Left hind limb is abnormally flexed, giving appearance of stringhalt. A rectal examination revealed tumors at bifurcation of Iliac arteries. Diagnosed as compression of lumbo-sacral plexus by melanotic tumors. No medicine given.

Case No. 3.—Dr. W. Warren, of Sedalia, Mo., clinician, assisted by Messrs. McCartney, Hill and Vansell. A tenotomy operation for contraction of the flexor tendons. The toe rested on the ground, but heel was elevated, foot was drawn out of shape with evidence of soreness in the tendon sheath above the

carpal joint. The tendons were divided about two inches above the fetlock joint. A well-taken point in operations of this kind was to thoroughly wet the opposite limb, to avoid dust and other particles being thrown into the wound, during struggles of the animal.

Case No. 4.—Dr. Moore, clinician, assisted by Messrs. Hill, Vansell, Collette, and Dr. C. C. Kinsley. This was a very interesting surgical case—the removal of half of the cow's udder. There was a large necrotic area on left side, with some sloughing of skin, and right side hardened. Case was diagnosed as Necrotic Mammitis. In performing the operation, the mammary artery was ligated at point where it leaves the inguinal canal, thus avoiding excessive hemorrhage and the necessity of ligating the smaller branches of this artery.

Case No. 5.—Dr. A. T. Kinsley, clinician. This was a case of so-called "Swamp Fever," and brought out much discussion, and various remedies from the visiting veterinarians. The animal was a gray draft horse, four years old, was brought from a farm where he had been kept in a small pasture with some other horses, two of which had died from this disease. There have been periodic attacks of fever, going as high as 108 degrees, leaving the horse weak and anæmic. The blood on examination was thin and watery and showed lack of hæmoglobin.

The animal was first treated with one pint of linseed oil, in which was put one ounce of turpentine; this was administered daily, for several days, when the dose was doubled for some time; result of this treatment was the passing of quantities of worms. Animal had been receiving small doses of arsenic daily for the past month and seemed to be improving.

Dr. S. L. Stewart reported very good results from the use of Salol in a number of cases of this kind.

R. F. BOURNE,  
*Acting Secretary.*

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## VETERINARY ASSOCIATION OF MANITOBA.

The annual meeting of this Association was held in the rooms of the Dominion Department of Agriculture, Winnipeg, on Tuesday, February 16, 1909.

The President, Dr. C. D. McGilvray, occupied the chair, and the following members were present: W. A. Dunbar, W.

Hilton, W. J. Hinman, W. E. Martin, J. D. McGillivray, M. B. Rombough, W. A. Shoults, F. Torrance, A. E. Williamson, T. F. F. Baker, J. B. Still, and P. A. Robinson, of Winnipeg; S. A. Coxe and S. Robinson, of Brandon; J. Welch, of Roland; W. R. Taylor and H. Bradshaw, of Portage la Prairie; J. Mack, of Neepawa; J. Golley, of Trehorne; J. H. Part, of Swan River; W. J. Cruikshank, of Deloraine; W. H. Smith, of Carman; J. A. Swanson, of Manitou; J. M. Young, of Rapid City; J. H. Lipsett, of Holland; J. Irwin, of Stonewall; L. McQueen, of Selkirk; and W. B. Stiver, of Elgin.

The reports of the auditors and treasurer showed the financial affairs of the Association to be in a healthy condition.

The registrar announced that during the year the following new members had been admitted after passing the required examination:

W. H. T. Lee, of Minto, M. D. V., McKillop, '08; J. McDougall, of Kenton, M. D. V., McKillop, '08; J. A. Munn, of Carman, M. D. V., McKillop, '08; T. J. E. Rutledge, of Carberry, M. D. V., McKillop, '08; W. B. Still, of Neepawa, M. D. V., McKillop, '08.

The death, on February 29, 1908, of G. V. Rowcroft, of Birtle, was recorded with the deepest regret. He was a graduate of the Ontario Veterinary College, 1897, and an active member of the Association since 1898.

The return to Manitoba of one of the original members of the Association, T. F. F. Baker, after an absence of some eighteen years, was noted with pleasure. The membership is now one hundred and six.

The election of officers resulted as follows:

President—J. Welch, of Roland.

Vice-President—J. Irwin, of Stonewall.

Secretary-Treasurer and Registrar—F. Torrance, of Winnipeg.

Examiners—C. D. McGillivray, W. J. Hinman and F. Torrance.

Council—The above, and J. H. Lipsett and W. E. Martin.

The annual fee was fixed at two dollars, as heretofore.

In a few well-chosen words the retiring President, C. D. McGillivray, introduced the newly elected President, Dr. Welch, and the Vice-President, Dr. Irwin, to the meeting.

Dr. Welch thanked the meeting for the honor conferred on him. It came as a surprise to him, but he would use his best

endeavors in the interests of the Association and the profession. He suggested and hoped that another year, if all worked together to that end, they would be able to have a good clinic for the next annual meeting. It was one thing he would very much like to see, and there was no reason why they should not have it.

Dr. Irwin and Dr. Torrance also suitably responded for being elected to their respective positions.

On motion of Dr. Young, seconded by Dr. S. Robinson, a hearty vote of thanks was tendered to the retiring President, Dr. C. D. McGilvray.

Dr. McGilvray: "Fellow members of the Manitoba Veterinary Association—It affords me great pleasure in accepting the vote of thanks you have tendered me. I might say that from the time I have been associated with the members of this Association, I have always found that the greater number have always done all in their power to forward the interests of the profession. I think that in the gentleman who is succeeding me you may expect better results than you obtained from me."

Dr. Hinman: "I understand that the Ontario Veterinary College has now gone in for a three-year course; would the Registrar be good enough to inform us what graduates are allowed to practise under our regulations? I understand that the graduates of the Ontario Veterinary College are now eligible to do so, and would like to know from what other colleges graduates are eligible."

Dr. Torrance: "Under our Veterinary Association Act, the provisions require that candidates for registration shall be graduates of a recognized veterinary college, having a curriculum of not less than three sessions of six months each. None of our colleges since McGill went out of veterinary teaching have complied with that until recently. During the past year the Ontario Government made arrangements with Professor Andrew Smith whereby the Ontario Veterinary College became part of the Toronto University, and the curriculum was raised to three sessions. In future, graduates of this college will comply with our law, and there will be no question of their having to go elsewhere to enable them to comply with our regulations. As regards other colleges, there are a great number in the United States that give a sufficient qualification to their graduates to enable them to be registered here; in fact, only one or two colleges in the United States have less than a three-year curriculum, but as we have never had any application

from graduates of any of these colleges, we have never had the question raised. Under our act, it is left with the Manitoba Veterinary Association to recognize veterinary colleges, as we presume recognition means 'recognition by this Association.' Among the colleges hitherto recognized by us are the 'McKillop' and Chicago Veterinary Colleges, McGill, and the Ontario Veterinary College prior to 1898. In future we will recognize graduates from the Ontario Veterinary College who graduate in this or subsequent years."

On motion of Dr. Hinman, seconded by Dr. Golley, Drs. Taylor and Rombough were appointed auditors for the ensuing year.

There being no further business before the meeting, the Secretary read a paper sent in by Dr. F. J. Braund, of Boissevain, on "Azoturia." A brief discussion followed, in which Drs. Martin and Golley related their experience with various remedies in the treatment of the disease.

The meeting then adjourned until the evening, when a banquet was held in the Manitoba Hall, the Vice-President, Dr. Irwin, taking the chair in the absence of the President. Some twenty-five sat down, including, besides the members of the Association, the following inspectors of the Federal Meat Inspection Department—Drs. Bell, Ross, Cameron, Walsh, Snider, English and Shonyo.

After the good things had been disposed of, the chairman proposed the health of the King, which was duly honored, the company rising and singing "God Save the King."

Papers were then read by Dr. Martin on a case of Tenotomy;\* by Dr. Dunbar on "Professional Etiquette"; by Dr. Cameron on "Opsonic Therapeutics";† by Dr. McGilvray on "Recent Advances in Veterinary Knowledge"; by Dr. Torrance on "Some Personal Experiences with Cases of Inguinal and Ventral Hernia."

Several of the papers elicited a lively discussion, and the members felt that the time had been well spent.

It was decided to hold the semi-annual meeting in Winnipeg, final arrangements to be left in the hands of the Council.

The meeting then adjourned.

F. TORRANCE,

Sec.-Treasurer and Registrar.

\*Published in "Reports of Cases," page 59.

†See Original Articles, page 48.

## ARKANSAS VETERINARY ASSOCIATION.

The second annual meeting of the above association was called to order by the President, Dr. V. J. Audre, on February 3, 1909.

Election of officers resulted as follows:

Dr. Audre re-elected President; Dr. W. A. Fry, Vice-President; Dr. H. E. Rice, Secretary-Treasurer.

The President appointed the following committees:

Legislation—Drs. E. S. Rice, W. Lenton, D. B. Morgan.

Arrangements—Drs. B. H. Merchant, H. C. Hoskins, A. C. Deaver.

Censors—Drs. W. A. Fry, R. L. Pryor, D. B. Morgan.

By-Laws—Drs. W. Lenton, H. E. Rice, R. R. Dinwiddie.

Governor Geo. W. Donaghey, who, in his message, advised the Legislature to pass a law regulating the practice of veterinary medicine, was elected an honorary member.

W. M. Rankin, State Humane Officer, the veterinarian's friend, was also elected an honorary member.

The Secretary presented the following communication from the Arkansas Humane Society:

“It is time that the public be taught that in order to be qualified for his work the veterinarian must first of all be well educated in one of our recognized colleges, and that it requires fully as much time, training and study to qualify in veterinary science as in human medicine; that the old ‘hoss doctor’ is no longer a representative of the profession, and must not be taken as an example of this class or as a type of a qualified veterinarian; that the veterinary profession has produced some of the greatest scientists the world has known; that an educated veterinarian is entitled to equal social standing with other professional men, none excepted; that it is quite as noble—and perhaps more noble—to be able to relieve the suffering dumb animal that cannot help itself and protect mankind from communicable diseases as it is to minister to human beings; that the world needs scientific veterinarians as well as physicians to protect the health and lives of both animals and humans.”

A veterinary bill pending before the Legislature was endorsed by the Association, and our legislation committee instructed to use all honorable means to obtain its passage.

Upon motion, meeting adjourned.

HORACE E. RICE,  
Secretary.

## CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

The annual meeting of the above association was held Tuesday, February 2, 1909, at Hotel Hartford, Hartford.

The meeting was called to order at 1.30 p. m. by Ex-President Dr. J. H. Kelley. Members present—Drs. Thos. Bland, H. E. Bates, Geo. T. Crowley, Chas. L. Colton, B. K. Dow, P. F. Finnigan, L. B. Judson, J. H. Kelley, P. T. Keeley, G. W. Loveland, H. Whitney, C. R. Witte and V. M. Knapp.

Minutes of the previous meeting were read and approved.

Reports of the Secretary and Treasurer were read and approved.

The Board of Censors reported favorably on the following applications: V. M. Knapp, D. V. M., Danbury; E. F. Schofield, V. S., Greenwich; F. D. Monell, V. S., Derby. It was voted to accept the report and elect the applicants to membership in the Association.

Officers were elected for the ensuing year as follows:

President—Dr. P. T. Keeley.

First Vice-President—Dr. F. F. Bushnell.

Second Vice-President—Dr. L. B. Judson.

Secretary—Dr. B. K. Dow.

Treasurer—Dr. H. Whitney.

Board of Censors—Dr. Thos. Bland, Chairman; Dr. G. W. Loveland, Dr. H. E. Bates, Dr. J. H. Kelley, Dr. G. T. Crowley.

Under the head of new business, Dr. Bland gave an interesting report of the annual meeting of the A. V. M. A., held at Philadelphia last September, making special mention of the cases of Epizootic Lymphangitis that were exhibited at the clinic. Dr. Bland's report resulted in an interesting discussion of the cases.

Drs. Keeley and Bland invited the Association to hold the semi-annual meeting in Waterbury, at Dr. Bland's hospital. The invitation, being very cordial, met with approval of the members present, but as there were several absent from various sections of the state, it was voted that the invitation be laid on the table for a few weeks or until the President could communicate with all the members and get their views as to time and place of next meeting, which is usually held the first Tuesday in August.

Meeting adjourned at 5.30 p. m.

B. K. Dow,  
Secretary.

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## YORK COUNTY (PA.) VETERINARY MEDICAL SOCIETY.

The annual meeting of the above society was held on Tuesday afternoon, March 2, 1909, in the parlors of the National Hotel, York, Pa., with a large number of members from the city and county in attendance.

Election of officers resulted as follows:

President, Dr. H. E. Kline, York; First Vice-President, Dr. J. D. Smith, Dallastown; Second Vice-President, Dr. W. E. Craumer, Brodbeck's; Secretary, Dr. E. S. Bausticker, York; Treasurer, Dr. Charles Lenhart, Dover; Trustees, Drs. J. D. Smith, Dallastown; J. H. Hamme, York, and M. H. Gladfelter, Paradise; Censors, Drs. W. L. Herbert, E. S. Bausticker and J. H. Hamme, all of York.

Interesting papers were read on the following subjects: "The Recent Outbreak of Foot-and Mouth Disease in Pennsylvania," "Rabies in Cattle," "Osteo-Sarcoma in Cattle," and "Animal Tuberculosis."

Society adjourned to meet in June.

E. S. BAUSTICKER,  
Secretary.

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THE students of the San Francisco Veterinary College held their annual banquet at the Grand Central Hotel, San Francisco, Cal., on the evening of March 13th, the senior class being the guests of honor. The alumni association was represented by a large delegation. Dr. M. J. O'Rourke acted as toastmaster. At the conclusion of the banquet each member of the graduating class was presented with a handsome stein.

FOOT-AND-MOUTH DISEASE QUARANTINE REMOVED FROM NEW YORK AND MOST OF PENNSYLVANIA.—The Secretary of Agriculture has issued an order, which became effective March 26, 1909, releasing from the quarantine for foot-and-mouth disease the entire state of New York and all of Pennsylvania, except certain portions of Delaware and Lancaster counties, as follows: In Delaware county, the borough of Glen Olden; in Lancaster county, the townships of East Donegal, Rapho, Penn, Warwick, West Earl, Upper Leacock, East Lampeter, Manheim, East Hempfield, West Hempfield, Manor, Lancaster, Pequea, West Lampeter, Strasburg, Providence, Conestoga, Martic, Drumore, and the boroughs and the city of Lancaster.



## NEWS AND ITEMS.

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DR. L. T. LEWIS, of Gallatin, Tenn., reports the removal of a Champignon weighing 16 pounds and 4 ounces.

DR. C. G. VOLLMER, formerly of Kent, Ohio, has accepted a position as assistant to Dr. J. H. Blattenberg, of Lima, Ohio.

DRS. R. A. PHILLIPS and A. B. WARRENER, of Oklahoma City, have established a veterinary hospital at that place, and report prosperity.

THE date for holding the 46th annual meeting of the A. V. M. A. at Chicago has been changed from September 14-17 to September 7-10.

IT is said that Dr. Coleman Nockolds, veterinarian, 1st cavalry, is likely to become a benedict. He sailed for Hong Kong, February 1st.

DR. B. K. DOW, of Willimantic, Conn., has been giving a course of lectures on veterinary science, at the Connecticut Agricultural College, during the winter term.

EACH number of the REVIEW is anxiously looked forward to as it always contains so much interesting and instructive reading.—(*Walter R. Pick, Veterinarian, 1st Cavalry, Camp Stotsenburg, Pamp, P. I.*)

NEW YORK'S champion speedway trotter, Invader, 2.10, has gone to the Canadian Northwest, having been purchased by Dr. W. J. Hinman, of Winnipeg, Manitoba, who will use the great trotter for amateur harness racing.

IT is with deep regret that the REVIEW announces the death of Dr. Sidney L. Hunter, of Fort Leavenworth, Kansas, one of the ablest veterinarians in the United States Army and an esteemed member of the A. V. M. A.

THE fifth annual banquet of the Veterinary Medical Society of the Iowa State College, given in honor of the alumni and graduating class, took place at The Chamberlain, Des Moines, Iowa, on Friday evening, March 12, 1909.

EDITORS AMERICAN VETERINARY REVIEW.—I wish to congratulate you on the excellent journal you are furnishing the profession. Every year sees a marked improvement over the one preceding.—(*Dr. W. G. Clark, Veterinarian, Marinette, Wis.*)

A. R. WARD, D. V. M., has just completed giving a special course in bacteriology and milk sanitation at the San Francisco Veterinary College. He leaves in a few days for Europe where he will study milk conditions and do research work in bacteriology.

THE Canadian government has removed from the state of Michigan its quarantine restrictions on account of foot-and-mouth disease, and that the British government will now permit the importation of animals from Michigan to Great Britain for slaughter.

GEORGE T. ANGELL, "the friend of animals," died at Boston, March 16th, aged 86 years. Mr. Angell had been for many years the leader in the humane educational movement in the United States and was the founder of the publication known as *Our Dumb Animals*.

T. WRIGGLESWORTH, V. S., Eau Claire, Wis., is now convalescent after having undergone an operation for the removal of a calculus from the left kidney. Dr. Wrigglesworth suffered untold agony before the operation and feels thankful for his restoration to good health.

GULIAN C. FAGAN, D. V. S., graduate of the American Veterinary College, class of 1889, died at his late residence, Katonah, N. Y., on Wednesday, March 17, 1909. Dr. Fagan was a resident of New York City at the time of his graduation, and practised there until recent years. He is survived by a widow and one child.

EDWARD J. YOUNG, V. S., graduate of the New York College of Veterinary Surgeons, class of 1891, died at Strafford, Pa., on February 6, 1909, just two days after the death of his brother, Dr. Thos. D. Young, of Media, Pa. This makes the sixth death in Pennsylvania of the registered veterinarians since the beginning of the new year.

At the regular monthly meeting of the B. A. I. Veterinary Inspectors' Association of Chicago, held on Friday evening, March 12th, Dr. J. M. Handley read a paper on recent parturition and presented a specimen of a uterus taken from a cow that had calved fourteen days previously. Drs. Paxon, Faunce and Giltner participated in the discussion of Dr. Handley's paper.

VETERINARIAN NARROWLY ESCAPES DEATH.—Hillsboro, March 1.—Less than one minute after a dozen laborers engaged in excavating for the new Durnell block had quit work for dinner to-day the north wall of the old Trimble building collapsed and the space they had occupied was covered with débris. Dr. S. R. Howard, veterinary surgeon, who had an office in the old building, narrowly escaped death.—(*Ohio State Journal, Columbus, March 2, 1909.*)

DR. W. H. DALRYMPLE'S recent lectures on "Diseases Common to Animal and Man," delivered at the medical department of Tulane University, have not only been endorsed in the highest terms by members of the medical faculty but evidently have made a favorable impression upon the public mind. Two of the leading daily newspapers of New Orleans published splendid editorials and gave lengthy reports of the lectures. This is work that tells for the profession.

It is said of E. J. (Lucky) Baldwin, noted horseman and multi-millionaire, who died recently at his home at Arcadia, California, that when he began business operations in California years ago that his rivals plotted against him and formed rings to beat him, but he defeated them at every turn and earned the sobriquet "Lucky," which he bore to the end of a long and eventful career. We are indebted to Dr. C. W. Barrett, City Veterinarian of Pasadena, Cal., for a picture of Mr. Baldwin and an interesting account of his remarkable and "lucky" life.

BANQUET OF THE ALUMNI ASSOCIATION OF THE NEW YORK-AMERICAN VETERINARY COLLEGE.—The Alumni Association of the New York-American Veterinary College (Veterinary Department of New York University), will hold its annual banquet at Reisenweber's, Fifty-eighth street and Columbus Circle (Eighth avenue), on Wednesday evening, April 14th. There will be a reception in the parlors from 7.30 to 8 p. m. and the dinner will begin promptly at eight o'clock. A splendid time is in anticipation, and it is hoped that every alumnus will lay aside

the cares of practice for a few hours and participate in it. Write the secretary, Dr. L. L. Glynn, No. 141 West Fifty-fourth street, New York, of your intention to attend, as it will materially aid him in perfecting his arrangements.

PROSECUTIONS IN PENNSYLVANIA.—During the month of March at Lancaster, Pennsylvania, prosecutions of W. M. Strayer resulted in a petition to the court for the conviction of a false statement made in 1891 under the Veterinary Practice Act. The court granted the petition and directed the prothonotary to make a record of the same.

In the same county I. Garber, of New Holland, and H. H. Kurtz, of Kinzers, plead guilty to violating the same acts and by agreement of counsel further prosecution was suspended on payment of all costs and the pledge of the offenders to in no way further violate the law.

Dr. H. A. Paget, of Scranton, has been placed under arrest and two bills found against him for failure to register under the act of 1905 in Pennsylvania.

John Jonas Johnson, of Philadelphia, plead guilty of violating the several laws regulating veterinary practice in Pennsylvania at the March term of court.

D. A. Brunsinger, of Reading, Pa., was recently convicted of practising veterinary dentistry in Pennsylvania contrary to the laws regulating the practice of veterinary medicine and surgery.

WHAT IS THE GOOD OF COMPARATIVE ANATOMY?—To understand our own bodies we have to explain them in terms of the structure of other animals, and many of our parts would be meaningless to us but for a knowledge of comparative anatomy. Our cankered vermiform appendix is represented in some animals by a large and serviceable attachment of the digestive tract, which explains it as a degenerate organ and therefore necessarily variable. Deep between the hemispheres of the brain is a little sac about the size of a pea, the pineal gland, and comparison shows that this was once a third eye. Sometimes an opening persists on the side of the neck below the jaw; in such a case one of the embryonic neck clefts has remained open, and this in turn has relations to the gill slits of a fish. All the ground plan of our bodies, the muscle cylinder within the skin, next the bony scaffolding, innermost the peritoneal sack around the viscera, all such relations would remain a mystery did we

study only the human body. But in the light of comparative anatomy and embryology we recognize them as necessary parts of our heritage. Medicine must stand upon a thorough knowledge of the structure and processes of the human body, and before it can treat disorders it must understand states of health and their origin. Comparative anatomists and embryologists, the great men Harvey, Wolff, Von Baer, Cuvier, Agassiz, Huxley, Cope, and Gegenbaur, such men have not only broadened the field of human thought, but have also furnished the understanding of the human organism. They were all pure scientists, they did not have in mind the care and cure of the human body. Yet we might say they accomplished more for a rational medicine than all the physicians before them. How unlikely the prophecy seemed that any direct advantage would come to mankind from the researches of Harvey, Wolff, and Von Baer on the development of the chick, from those of Cuvier and Agassiz on fossils, or from those of Huxley, Cope, and Gegenbaur on comparative anatomy. As the result of this change of thought we now see most medical schools prescribing biological courses, and choosing their professors of anatomy largely from the ranks of embryologists.—(*Popular Science Monthly*.)

THE ITHACA BANQUET.\*—The sixth annual banquet of the Society of Comparative Medicine of the New York State Veterinary College at Cornell University was held at the Ithaca Hotel on the evening of February 26, 1909, and was pronounced by many to be the most successful affair ever attempted by the society.

Covers were laid for one hundred members and their friends and while the course of the menu were being served an orchestra furnished music. After the sumptuous dinner had been served, J. V. Townsend, '09, with a few well-chosen remarks welcomed the visitors to the banquet and introduced Dr. W. L. Williams as toastmaster for the evening.

The following responded to toasts: Dr. Hollingworth, of Utica; Dr. Berns, of Brooklyn; Dr. Kerr, of Cornell Medical College; Commissioner Pearson; and of the faculty, Drs. Udall, Taylor, Fish and Moore.

Deserving of special notice was the toast of Dr. Hollingworth on "Optimism," † in which his sound advice won the

\* Abstract from Banquet Report, New York State Veterinary College.

† Will appear in the May number of REVIEW.

praise of every one present. The maxims he set forth in reference to every-day honesty, and notably the attitude to be assumed in the home, of every practitioner, proved the character of the speaker.

Dr. Berns, who had just finished a very interesting course of lectures at the College, demonstrated in his toast the value of the teacher to the practitioner.

The banqueters were very enthusiastic over the interesting and convincing manner in which Commissioner Pearson explained "The Relation of Veterinary Science to Agriculture." His remarks tended to bring out the great need of the live stock owner for men well trained in sanitary science.

Letters were read from Dr. Ellis and Dr. Miller, both of New York City.

Among the visitors and alumni present were Dr. Clark, of Seneca Falls; Dr. Axtell, of Binghamton; Dr. Cady, of Buffalo; Dr. Wilder, of Akron; Dr. Kellogg, of Interlaken; and Drs. Kingsbury and Gage, of the Cornell Medical College.

Following are the students comprising the Banquet Committee:

F. E. McClelland, '09, Chairman; H. B. Risley, '09, Ex-Officio Member; J. V. Townsend, '09; C. A. Roig, '10; H. R. Millard, '11; F. S. Wood, '09; F. F. Koenig, '09; L. J. Benson, '09; C. R. Fairchild, '10; R. H. Mayberry, '11.

WESTERN CANADA NOTES.—At last the Saskatchewan veterinarians have an association with legal standing, this being authorized by Bill No. 7 of the Saskatchewan legislature of 1908-'09. The bill is much on the same lines as the bills legalizing the associations of the lawyers and medical men. It provides the usual penalties for those not qualified who shall practise illegally. Several items stand out in this act which show its modernity, (a) defining veterinary science, veterinary practice, and veterinary surgery as meaning, without restricting the general meaning of such words, and including the performance of any surgical or dental operation upon animals, the diagnosis of diseases of animals, and the prescribing or administering medicines for the cure of the same or for hire, gain or hope of reward. The itinerant veterinary quack, so-called, dentist, will thus be checked and his trail of damaged equine mouths and unsophisticated farmers' depleted pockets rendered more faint until he will become as extinct as the dodo; (b) election of the coun-

cil of seven is by ballot and no plumping permitted; (c) further the power to establish a veterinary college is not given, that prerogative being vested, as it should be, in the provincial university; (d) a reciprocity scheme is arranged for by the new act between the various provinces.

The registrar appointed pro tem. by the Lieutenant-Governor in Council is Dr. J. J. Murison, Arcola, Sask. It is expected that all the practitioners in the province will soon enroll and form the nucleus of a live professional body.

Dr. Chas. Head has returned to field work in Saskatchewan after three months' work patrolling the Canadian line from Toronto to Cornwall in connection with the foot-and-mouth outbreak in the United States.

Dr. Armstrong, Regina, has now a partner, Dr. Kemp, lately of Dubuc, Sask.

J. E. Littlehales, V. S., late of the Health of Animals Branch, is practising in Regina.

*Married*—On December 10, 1908, at the Methodist Parsonage, Moose Jaw, Sask., by the Rev. E. J. Chegwin, M. A., Edith A. Jones, eldest daughter of Geo. H. and Mrs. Sealy, Westhope, Sask., to Arthur G. Hopkins, B. Agr., D. V. M., in charge of Health of Animals Branch, Regina, Sask.

The Alberta Government's meat commission has issued a report, one recommendation of the commissioners being that a packing house (abattoir) for hogs be not established by the Government until the farmers can guarantee 50,000 hogs per year. Not a high mark to set according to Chicago standards! The legislature of that province has set aside \$50,000 against the likelihood of a packing house being called for.

The Horse Breeders' Enrollment Act will be enforced firmly this season is the announcement of the Department of Agriculture at Regina. All owners of stallions must enroll their horses before being allowed to go to the stud and charge fees.

A new bulletin is entitled "Sheep Husbandry in Canada," and may be obtained from the Live Stock Commissioner, Ottawa, Ont.

The agricultural members of the legislature were successful in having the operations of castration, spaying and dehorning exempt from the provisions of the Act to incorporate the veterinary profession in Saskatchewan.

A movement is on foot to raise a testimonial to Dr. Sweetapple, of Toronto.

FARM ANIMALS INCREASE.—The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture estimates, from reports of correspondents and agents of the bureau, the numbers and values of farm animals on farms and ranges in the United States are as follows:

| Farm Animals.           | Number.    | Average<br>price per<br>head. | Total value.    |
|-------------------------|------------|-------------------------------|-----------------|
| Horses, 1909.....       | 20,640,000 | \$95.64                       | \$1,974,052,000 |
| Horses, 1908.....       | 19,922,000 | 93.41                         | 1,867,530,000   |
| Average, 1898-1907....  | .....      | 60.25                         | .....           |
| Mules, 1909.....        | 4,053,000  | 107.84                        | 437,082,000     |
| Mules, 1908.....        | 3,869,000  | 107.76                        | 416,939,000     |
| Average, 1898-1907....  | .....      | 72.30                         | .....           |
| Milch cows, 1909.....   | 21,720,000 | 32.36                         | 702,945,000     |
| Milch cows, 1908.....   | 21,194,000 | 30.67                         | 650,057,000     |
| Average, 1898-1907....  | .....      | 29.52                         | .....           |
| Other cattle, 1909..... | 49,379,000 | 17.49                         | 863,754,000     |
| Other cattle, 1908..... | 50,073,000 | 16.89                         | 845,938,000     |
| Average, 1898-1907....  | .....      | 19.02                         | .....           |
| Sheep, 1909.....        | 56,084,000 | 3.43                          | 192,632,000     |
| Sheep, 1908.....        | 54,631,000 | 3.88                          | 211,736,000     |
| Average, 1898-1907....  | .....      | 2.92                          | .....           |
| Swine, 1909.....        | 54,147,000 | 6.55                          | 354,794,000     |
| Swine, 1908.....        | 56,084,000 | 6.05                          | 339,030,000     |
| Average, 1898-1907....  | .....      | 6.07                          | .....           |

Compared with January 1, 1908, the following changes are indicated: Horses have increased 648,000, mules increased 184,000, milch cows increased 526,000, other cattle decreased 694,000, sheep increased 1,453,000, swine decreased 1,937,000.

In average value per head horses increased \$2.23, mules increased 8c, milch cows increased \$1.69, other cattle increased 60c, sheep decreased 45c, swine increased 50c.

In total value horses increased \$106,522,000, mules increased \$20,143,000, milch cows increased \$52,888,000, other cattle increased \$17,816,000, sheep decreased \$19,104,000, swine increased \$15,764,000.

The total value of all animals enumerated above on January 1, 1909, was \$4,525,259,000, as compared with \$4,331,230,000 on January 1, 1908, an increase of \$194,029,000, or 4.5 per cent.



## VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

| Name of Organization.               | Date of Next Meeting. | Place of Meeting. | Name and Address Secretary.      |
|-------------------------------------|-----------------------|-------------------|----------------------------------|
| American V. M. Ass'n.....           | Sept. 7-10, 1909.     | Chicago.....      | R. P. Lyman, Hartford, Conn.     |
| Vet. Med. Ass'n of N. J.....        | July 14-15, 1909.     | Atlantic City.    | W. Herbert Lowe, Paterson.       |
| Connecticut V. M. Ass'n.....        | .....                 | New Haven ..      | B. K. Dow, Willimantic.          |
| New York S. V. M. Soc'y.....        | Sept., 1909.....      | Ithaca.....       | J. F. De Vine, Goshen.           |
| Schuylkill Valley V. M. A.....      | June 16, 1909....     | Reading.....      | W. G. Huyett, Wernersville.      |
| Passaic Co. V. M. Ass'n.....        | Call of Chair....     | Paterson, N. J.   | H. K. Berry, Paterson, N. J.     |
| Texas V. M. Ass'n.....              | Call Exec. Com.       | Boston.....       | R. P. Marsteller, College Sta.   |
| Massachusetts Vet. Ass'n.....       | Monthly.....          | Bangor.....       | Wm. T. White, Newtonville.       |
| Maine Vet. Med. Ass'n.....          | April.....            | Ottawa.....       | A. Joly, Waterville.             |
| Central Canada V. Ass'n.....        | .....                 | Saginaw.....      | A. E. James, Ottawa.             |
| Michigan State V. M. Ass'n.....     | Jan. 25-26, 1910.     | 141 W. 54th St.   | Judson Black, Richmond.          |
| Alumni Ass'n, N. Y.-A. V. C.....    | April 14, 1909....    | Bloomington..     | L. L. Glynn, N. Y. City.         |
| Illinois State V. M. Ass'n.....     | July 13, 1909....     | Louisville....    | J. H. Crawford, Harvard.         |
| Wisconsin Soc. Vet. Grad.....       | .....                 | Winnipeg.....     | S. Beattie, Madison.             |
| Illinois V. M. and Surg. A.....     | Jan. and Aug....      | Raleigh.....      | W. A. Swain, Mt. Pulaski.        |
| Vet. Ass'n of Manitoba.....         | Not stated.....       | 141 W. 54th St.   | F. Torrance, Winnipeg.           |
| North Carolina V. M. Ass'n.....     | .....                 | Columbus.....     | Adam Fisher, Charlotte.          |
| Ontario Vet. Ass'n.....             | 1st Wed. ea. mo.      | Pittsburgh....    | C. H. Sweetapple, Toronto.       |
| V. M. Ass'n, New York City.....     | .....                 | St. Joseph....    | W. Reid Blair, N. Y. City.       |
| Ohio State V. M. Ass'n.....         | 1st Wed. ea. mo.      | Rochester....     | Sidney D. Myers, Wilmington      |
| Western Penn. V. M. Ass'n.....      | .....                 | Ft. Dodge.....    | F. Weitzell, Allegheny.          |
| Missouri Vet. Med. Ass'n.....       | .....                 | Philadelphia..    | F. F. Brown, Kansas City.        |
| Genesee Valley V. M. Ass'n.....     | .....                 | Philadelphia..    | J. H. Taylor, Henrietta.         |
| Iowa Veterinary Ass'n.....          | .....                 | Denver.....       | H. C. Simpson, Denison.          |
| Minnesota State V. M. Ass'n.....    | .....                 | Omaha.....        | G. Ed. Leech, Winona.            |
| Pennsylvania State V. M. A.....     | .....                 | Providence...     | F. H. Schneider, Philadelphia.   |
| Keystone V. M. Ass'n.....           | Monthly.....          | Fargo.....        | S. Lockett, Glenolden.           |
| Colorado State V. M. Ass'n.....     | June, 1909.....       | San Francisco.    | M. J. Woodliffe, Denver.         |
| Missouri Valley V. Ass'n.....       | June, 1909.....       | .....             | B. F. Kaupp, Fort Collins, Colo. |
| Rhode Island V. M. Ass'n.....       | Jan. and June....     | .....             | T. E. Robinson, Westerly.        |
| North Dakota V. M. Ass'n.....       | Call of Sec'y.....    | .....             | C. H. Martin, Valley City.       |
| California State V. M. Ass'n.....   | .....                 | .....             | J. J. Hogarty, Oakland.          |
| Southern Auxiliary of California    | .....                 | .....             | .....                            |
| State V. M. Ass'n.....              | Jan. Apl. Jy. Oct.    | Los Angeles..     | J. A. Edmonds, Los Angeles.      |
| South Dakota V. M. A.....           | 2d Tues. in Jy. '09   | Sioux Falls..     | J. A. Graham, Sioux Falls.       |
| Nebraska V. M. Ass'n.....           | .....                 | Grand Island.     | H. Jensen, Weeping Water.        |
| Kansas State V. M. Ass'n.....       | .....                 | Topeka.....       | B. Rogers, Manhattan.            |
| Ass'n Médeciale Veterinaire Fran-   | 1st and 3d Thur.      | Lec. Room, La-    | .....                            |
| caise "Laval".....                  | of each month         | val Un'y, Mon.    | .....                            |
| Province of Quebec V. M. A.....     | .....                 | Mon. and Que.     | J. P. A. Houde, Montreal.        |
| Kentucky V. M. Ass'n.....           | .....                 | Not decided ..    | Gustave Boyer, Rigand, P. Q.     |
| Washington State Col. V. M. A.....  | 1st & 3d Fri. Eve.    | Pullman.....      | D. A. Piatt, Lexington.          |
| Indiana Veterinary Association..... | .....                 | Indianapolis..    | R. G. McAlister, Pullman.        |
| Louisiana State V. M. Ass'n.....    | .....                 | St. P.-Minneap    | E. M. Bronson, Indianapolis.     |
| Twin City V. M. Ass'n.....          | 2d Thu. ea. mo.       | .....             | E. P. Flower, Baton Rouge.       |
| Hamilton Co. (Ohio) V. A.....       | .....                 | .....             | S. H. Ward, St. Paul, Minn.      |
| Mississippi State V. M. Ass'n.....  | .....                 | .....             | Louis P. Cook, Cincinnati.       |
| Georgia State V. M. A.....          | Nov. 16-17, 1909.     | Athens.....       | J. C. Robert, Agricultural Col.  |
| Soc. Vet. Alumni Univ. Penn.....    | June, 1909.....       | Philadelphia..    | P. F. Bahnsen, Americus.         |
| Virginia State V. M. Ass'n.....     | July 9, 1909....      | Hampton.....      | B. T. Woodward, Wash'n, D. C.    |
| Oklahoma V. M. Ass'n.....           | .....                 | .....             | W. G. Chrisman, Charlo'sville.   |
| Veterinary Practitioners' Club..... | Monthly.....          | Jersey City...    | W. H. Martin, El Reno.           |
| Vet. Ass'n Dist. of Columbia.....   | 3d Wed. ea. mo..      | 514-9th St.,      | A. F. Mount, Jersey City.        |
| .....                               | .....                 | N. W.....         | .....                            |
| B. A. I. Vet. In. A., Chicago.....  | 2d Fri. ea. mo....    | Chicago.....      | M. Page Smith, Wash., D. C.      |
| Arkansas Veterinary Ass'n.....      | .....                 | .....             | D. D. Tierney, Chicago, Ill.     |
| York Co. (Pa.) V. M. A.....         | 1st Tues. in Mar.     | York, Pa.....     | Horace E. Rice, Little Rock.     |
| Philippine V. M. A.....             | .....                 | .....             | E. S. Bausticker, York, Pa.      |
| Montana State V. M. A.....          | .....                 | Helena.....       | R. H. McMullen, Manila.          |
| Veterinary Ass'n of Alberta.....    | .....                 | .....             | .....                            |
| Chicago Veterinary Society.....     | 2d Tues. ea. mo.      | Chicago.....      | C. H. H. Sweetapple, For.        |
| Maryland State Vet. Society.....    | .....                 | Baltimore....     | Saskatchewan, Alta., Can.        |
| St. Louis Soc. of Vet. Inspectors.  | 1st Wed. fol. the     | .....             | J. M. Parks, Chicago.            |
| .....                               | 2d Sun. ea. mo.       | St. Louis.....    | H. H. Counselman, Sec'y.         |
| Washington State V. M. A.....       | .....                 | Seattle.....      | Wm. T. Conway, St. Louis, Mo.    |
| .....                               | .....                 | .....             | J. T. Seely, Seattle.            |

## PUBLISHERS' DEPARTMENT.

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MUTUALLY BENEFICIAL.—Prompt renewals of subscriptions to Volume XXXV., which begins with the current number (April), together with an influx of *new* subscriptions *beginning* with the new volume, are very encouraging; as it insures to the readers a continuation of the excellent periodical they have been receiving in the past, and increases the usefulness of an already peerless advertising medium for veterinary products, or any article whose recommendation may come *through* the veterinarian.

This last phase of the advertising medium of the REVIEW is inestimable and cannot be "checked by returns," as advertisers say, because there is no means of tracing the results to their source. As a few examples, general disinfectants, prepared food products for horses and dogs, ear-tags for cattle, etc., the sale of which is *directly* due to their recommendation to animal owners by REVIEW readers. By that means one reader of an advertisement may bring the product advertised to the attention of hundreds of interested persons.

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CREDIT WHERE CREDIT IS DUE.—The publishers of veterinary books have been very active in the past few years in placing many excellent works within the reach of the veterinary profession. There are Jenkins, of New York; Taylor & Carpenter, of Ithaca; W. T. Keener & Co., of Chicago; and others, who have brought out some of the most valuable and useful books of the present age. And we wonder how many men who buy books, and expect to find them ready for them to buy, on any branch of their profession, appreciate what it means to a veterinary book publisher to put a book of a high character, illustrated with excellent cuts, etc., on the market. Few really realize the amount of expenditure, with the limited call for them in sight, such ventures mean to a veterinary book publisher. May such houses ever continue in these efforts, which accrue to the benefit and enlightenment of the veterinary profession.

### REVIEWS WANTED.

WANTED.—January, February and August, 1908, and September, 1905, numbers of AM. VET. REVIEW. Address AMERICAN VETERINARY REVIEW, 509 West 152d Street, New York, N. Y.

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# AMERICAN VETERINARY REVIEW.

MAY, 1909.

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## EDITORIAL.

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### EUROPEAN CHRONICLES.

PARIS, March 15, 1909.

Quite some time ago, Prof. Coquot, of Alfort, read at one of the meetings of the Société Centralé here the relation of a successful experiment, that of a case of open tuberculosis with an ugly wound, abundant discharge, etc., etc., which he had made in using a new preparation called *Ambril*. The relation passed without attracting much attention; certainly, not as much as it deserved.

Lately at the Société de Pathologie Comparée the use of ambril was again brought forward by a veterinarian, Mr. Lepinay, who, after reviewing the advantages that can be expected from it in the treatment of wounds, such as hemostasis, easy and quick application, absence of suppuration and active leucocytosis, regular rapidity in the process of cicatrization, etc., etc., presented quite a long series of cases where he had obtained all that the discoverer of the application of the compound, Dr. Barthe de Sanford, had promised.

It was the history of a cat, which had an enormous tumor of the neck, which was in such condition that death was considered as unavoidable, after its being removed, and yet recovered with the simple application of ambril.

It was that of a slut with ulcerated tumor of the mammæ; that of a large mastiff dog which had a very deep wound of the posterior part of the thigh with fistulas, aponeurotic necrosis,

etc., and recovering in less than twelve days; that of a dog with an enormous tumor of the left groin, where a large, deep wound remained. One application of ambril put the wound in good way for cicatrization. And many others, of no less wonderful aspect. Of course, ambril has been used also by others. With a few the results have not been quite as brilliant. And yet I hear that in veterinary practice it is demanded by a certain number of practitioners. It has been experimented with in a number of the large humane hospitals in Paris, and out of 160 observations recorded the results have been excellent in 92%. It is even said that it is used in the French army by official order of the Secretary of War.

Taking all these facts into careful consideration, it may not be without interest for our colleagues in America to know about it should it find its way across the Atlantic.

But what is ambril? How is it used? What are its indications?

\* \* \*

In a pamphlet under the name of *Contribution to Hyperthermal Medication*, the author, Dr. Barthe de Sanford, tells us of the analgesic, resolute and aseptic properties of all the keriresins, to which ambril belongs, as an anhydrous mixture of wax and resin, and which is said to possess the following properties: 1st. Asepsy and sterility, as in its preparation a temperature of 130° C. is required; 2d. Considerable caloric capacity, which stimulates and promotes phagocytose, keeping hot after it is applied for several hours; 3d. Slow loss of self heat, which allows a dressing to remain in place without being changed by keeping its temperature at 44° C.; 4th. Contractility, which allows an even and continued pressure of the surface it covers; 5th. Easy manipulation; 6th. Rapid cicatrization; 7th. Suppleness of the cicatricial tissue; and 8th. Stoppage of the hemorrhage, except for large vessels, all of which are to-day essential in modern surgery. This keri-resin is kept in metallic tubes or pulverisators, which have to be placed in the water bath or heated in some



other way so as to liquify the contents, and after a few minutes when it is melted it can be poured over the surface upon which one may desire to apply it, or again in using a coarse paint brush it is spread as indication requires. A simple dressing covers the parts, wadding and bandage. And in this way is realized an aseptic dressing with which all the properties announced are obtained.

As to the indications for its application; they are quite numerous, perhaps too much so. Old, recent, superficial or deep wounds, diseased and fistulous withers or of poll-evil, wounds of the back, with saddle or harness, granular dermatitis, fistulas, scratches, bites, quitters, broken knees, etc. Those may be all right. But when we read that a good coat on the throat in case of laryngitis, or on abscesses to bring them to suppuration, or on a swollen leg, or in case of adenitis, etc., one may think of exaggeration, and yet, perhaps, with the latent heat that the application preserves so long, why should it not do as well or even better than the local application of hot poultices or warm compresses?

For the present this is all I have to say in relation to ambril, but I am promised more interesting facts. I will send them in due time.

\*   \*   \*

There has been published in the "Monatshefte fur praktische Tierheilkunde," by Dr. Erich Silbersiepe, of Berlin, a very complete study on fractures of the first pastern in horses, in which the author arrives at the important conclusion that such injuries ought to receive more attention as far as treating them, as in many instances the results are such that an animal may be able to render valuable services either for agriculture or breeding purposes and even in some cases for ordinary work. Doctor Silbersiepe has made numerous researches and gathered many observations at the surgical clinics of the veterinary school of Berlin and presents as conclusions:

1st. To the point of view of its structure the first pastern offers a special architecture, which has the most intimate relations with its functions. The anatomical disposition of its compact tissue is under the direct influence of the impressions and efforts to which it is exposed. And it is likewise for the spongy substance, which has its meshes so much more closed together that they are nearer the compact tissue so as to increase the natural resistance of the bone.

2d. Fractures of the pastern bone are relatively frequent in horses, more so in the anterior than the posterior legs, in the proportion of 3 to 1.

3d. These fractures are due to external and to internal causes, resulting from some morbid states of the bony substance. They may also be due to some peculiarities in the structure proper of the phalanx.

4th. To the point of view of their mode of production they can be classified as: sagittal, segmental, horizontal, in splinters, mixed, comminuted.

5th. As far as the process of recovery goes it includes important modifications, even in the form of the bone and some characteristic transformations in its intimate structure, which allow the fractured bone to recuperate its primitive functional integrity. In other words, in the most absolute meaning of the word *cured*, a fractured pastern is one that can be cured, and the pessimist view entertained against it is a mistake.

How can this radical cure be obtained? What is the best treatment of these fractures of the first pastern?

Doctor Silbersiepe says: First of all, and when it is a recent fracture, one must overcome the more or less developed inflammatory swelling which is seldom absent. That is done with astringents and antiseptic compresses. In Berlin, dressings made with clay and vinegar is the classical indication. These are covered immediately with a wadding padded boot, having two wooden or metallic splints running up to the knee or hock. The horse is kept tied up to prevent him laying, and it is only after a few

days that he is put in slings from which he will not be taken out until the fracture is consolidated, say, in average, two or three months. When the inflammatory swelling has subsided an immovable bandage is applied, the *plaster bandage*. This will start from the heels of the shoe and runs upwards to the knee or hock. It will be thick, well padded, regular, but not too unnecessarily voluminous. Any kind of crutches, which are patronized indeed by Hoffmann, Körner, Bidz and others, are not to be recommended, as patients generally object to them and expose the practitioner to failures due to motions or displacements of the fractured ends, resulting from imperfect immobilization. The bandage, having become defective after three or four weeks, must be taken off and a new one put in its place. This has to be done and it plays an important part in the final success. The final removal demands great care and ought to be done not before two or three months when all crepitation and all abnormal mobility have disappeared. With the bandage off the animal is taken from the slings and put in a loose box with a thick bed of sawdust, leather shavings or the like. To promote the formation of the callus, Doctor Silbersiepe recommends the daily administration of phosphorated oil in doses of one or two table spoonfuls mixed with the food, the oil being made of 0.50 centig. of phosphorus and almond oil 300 grammes. The result of this treatment, however, is doubtful if the fracture is complicated, as necrosis and arthritis are always possible. When lameness remains after consolidation the author has recourse to neurotomy.

\* \* \*

The anatomical characters of *Tuberculous Infection* was lately the subject of a lecture delivered by Prof. Arloing before the Société Médicale des Hopitaux at Lyons, in which he recalled the fact that tuberculous infection is not always manifested, in mammalia, by macroscopic tubercles in the various viscerae. He has indeed observed, principally, that tuberculous bacilli in homogeneous cultures, whose tuberculous nature was beyond doubt, does produce on the spleen, liver and lungs only microscopic

lesions, while on the peritoneum it gives rise to tubercles. Already in 1902, at the time of the discussion upon the identity of the bovine and human tuberculosis, he had shown that with ordinary bovine and human bacilli atypic lesions could be obtained where tuberculous inflammation had failed either in the formation of tubercle or the edification of the giant cells; also that lesions without possible contest could escape macroscopic examination and again that the infection must be looked for with the microscope, when it is disseminated in the principal parenchymatous organs. More recently, Prof. Arloing has studied the lesions produced with weakened bacilli in animals. Introduced in rabbits by every door of admission, except the peritoneum, in medium or very weak doses, bovine and human homogeneous bacilli, produced as macroscopic lesions, only splenic hypertrophy. Constant lesions, often very minute, are observed with the microscope only in the liver and spleen, more seldom in the lungs and kidneys. In the liver they consist principally in gathering of embryonic intra or perilobular cells, sometimes isolating the hepatic septi but without clearly follicular formation, and sometimes when the lesions are larger giant cells are found without the tubercles. In the spleen the changes are still less marked; they consist in a few epithelioid cells or a few giant cells here and there in the Malpighian bodies or on their outside. In the peritoneum these cultures have given rise to epiploic tubercles. The lesions are somewhat similar in guinea pigs. Therefore, most commonly, visceral macroscopic lesions are not found, but only microscopic, which do not present the clinical aspect of tuberculous lesions. With ruminants, no change or only extremely slight or doubtful alterations are observed. And yet all these animals gave all the reactions, *i. e.*, oculo reaction, sero-agglutination of the tuberculous infection.

From these very interesting facts, Prof. Arloing concludes: That tuberculous infection does not necessarily impose the apparition or presence of macroscopic lesions; that it may alter the organs in their depth without leaving any appearance on their surface; that it does not always give rise to the classical tuber-

culous follicle or even to the giant cells; that atypic microscopic lesions are produced by varieties of weakened bacilli; that those lesions are not characteristic of avian tuberculosis; and that tuberculous infection, without noticeable anatomical alterations, may be accompanied by the detecting reactions of tuberculosis.

Up to recently it has not always been an easy task to make the differential diagnosis between echinococci cysts and some special abdominal tumors. But continuing their investigations on the production of antibodies in organisms infected with helminthes, Mr. Weinberg and his assistants have succeeded in showing that the serum of animals affected with echinococci contains specific antibodies; then rendering the diagnosis simple and easy, providing fresh antigene was used. Their researches even went so far that a positive diagnosis was realized with this method, not only in sheep but also in camels. More recently, Mr. Weinberg has presented to the Société de Biologie a paper in which he has demonstrated that this method can also be applied in the diagnosis of distomatosis and cysticercosis, that is, by the presence of antibodies. Here is the resumé of this communication:

“Whatever may be the receptive value of each of the two methods of fixation of the complement and of the researches of the precipitines their simultaneous use has allowed the sero-diagnosis of helminthiasis and assisted medical practitioners in establishing their positive diagnosis.

“This sero-diagnosis is specially precious in such disease as echinococcosis, when eggs of the parasites are not in the fœces. We have endeavored to find out if the serum of animals affected with cysticercosis did not also contain specific antibodies. Frequent in animals, this helminthiasis is rare in man. Yet a certain number of cases of cysticercosis have been recorded, where the diagnosis was impossible to make with the ordinary clinical manifestations.

“Lately we obtained three cases of cysticercosis in sheep. The researches of the fixation of the complement has been made

with the liquid of cysticercus as antigene, a method similar to that used for echinococci. This liquid had been first filtrated on Berkefeld bougies. The reaction obtained has been of the cleanest and most evident. The serum of the normal sheep gave no reaction.

"We then made similar experiments for the diagnosis of distomatosis. We obtained blood from the heart of eleven sheep whose liver was infected with *fasciola hepatica* and prepared the antigene with the parasites themselves, washing them thoroughly, crushing them in a mortar, diluting in 30-40 C.C. of physiological water and centrifugating the whole for an hour. After sifting through a Chamberland or a Berkefeld, we obtained a clear liquid which can serve to the fixation of the complement as well as to the searching of the precipitines.

"The eleven samples of serum have given a positive reaction by the method of fixation of the complement using anti-bovine hemolytic serum. In eight cases abundant deposit was obtained by mixing the serum with the liquid from the crushed distomas. To ascertain the presence of specific antibodies in the serum of animals, distoma carriers, has not the same importance as for echinococcus. These parasites are found exceptionally anywhere else but the liver; their diagnosis can then be made by looking for the eggs in fœces. Yet these experiments show that distomas do secrete toxic substances and that their absorption promotes in sheep the formation of specific antibodies."

It is a well-known fact that in many instances the diagnosis of transmissible diseases becomes easy in man if, in his surroundings, there is an animal affected with the contagious disease present—a convincing evidence that human medicine often takes advantage of what information veterinary medicine can offer. But, from the fact that because there is in a house a sick person and an animal, living ordinarily around him or her, such as a dog or cat, and that both present analogous symptoms, it does not necessarily follow that they both have the same disease nor that the animal has transmitted the trouble to the person.

This is, however, of common occurrence, says Prof. Hebrant, and he has for the past two years studied this interesting question of the transmissibility of animal diseases to man. He intends to publish soon the result of his investigations, but for the present wants to establish the fact that there are some diseases of animals transmissible to man, such as sarcoptic mange, transmitted from dogs or cats, and which presents important differential characters, which permit a distinction between this acariasis in man and that of true scabies, and in the *Annales de Médecine Vétérinaire* of Bruxelles, the professor and his assistant, Mr. Antoine, give a comparative description of the disease in both species.

In small animals sarcoptic mange is more frequent than is generally supposed. Easily recognized in cats, it is more difficult to diagnose in dogs where it is often mistaken for chronic eczema. The diagnosis is based on the contagious nature of the disease, and the presence under the microscope of the parasites or its eggs, which must be looked for in the crusts or scruffs after soaking in a potash solution. The characters belonging to the disease are the seat and nature of the lesions, the great itching they give rise to, its contagious nature and its easily obtained recovery when the treatment is strictly antisporic, all of which are well known. A special symptom not to be overlooked, however, and which is of great importance is the peculiar odor of mice, *sui generis*, given off by the diseased dog.

The contagious nature must not be overlooked. Sarcoptic mange is communicated very easily, not only from one animal, dog or cat, to others, but also to people who live with him. And when it does affect human beings the affection is very different from the ordinary mange or scabies. As in being consulted for a case of sarcoptic mange in a small animal, a veterinarian may suspect it being transmitted to its owner, he may recognize it by the following:

It is on the arms, forearms, abdomen, inner face of the thighs and in the folds of these regions that the lesions are found, the interdigital spaces are always free from them. The lesions con-

sist in small spots, looking like flea bites, which are replaced the next day by a small pimple. This is the seat of violent itching. The pimples get bigger and the trouble looks like urticaria. The scratching is accompanied with great eruption. The pimples last for several days without spreading or getting more numerous. On the contrary, they often pass away without treatment. The simple washing of the hand with soap and water is sufficient to remove all trouble without resorting to any drug. One can readily observe the great difference that exists between this sarcoptic mange and the ordinary scabies, which characterized by its peculiar pathognomonic lesions, its pruitis and the severe treatment that it requires. There cannot be any comparison between it and the sarcoptic acariasis of the dog propagated to man.

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To the Committee on Publication of the American Veterinary Medical Association, I am happy to send my hearty compliments! Had the proceedings of the forty-fifth annual meeting reached me a few days earlier I could have noticed them last month. As it is, the issue has been nearly four months ahead of what it used to be and it is a wonderful progress! By this early publication facts that have occurred at the last gathering in Philadelphia are not yet entirely passed away from the minds of the many that were present and the interest has not entirely vanished.

The proceedings for 1908 form a volume of less importance, as far as size goes at least, when compared with that of 1907. It nevertheless contains matters of great importance and as much value. Of course, the various addresses of welcome are at the head of the work, followed immediately by brief records of each session in each day of the congress, and concluding with the election of the new officers, President Rutherford, with the vice-presidents, secretary, treasurer, etc.

Papers of great magnitude are not so many, but those that are published will be read with pleasure and interest. There cannot be any doubt that the reports of some of the committees will



be examined over with better opportunities to judge of their value. The report of the Committee on Diseases, with the papers of Director V. A. Moore, of Dr. J. R. Mohler, of O. E. Dyson and H. J. Milks; the report of the Committee on Intelligence and Education by Chairman Prof. Leonard Pearson, with the discussion following by Drs. Tait Butler, W. Horace Hoskins, Baker and Mayo. The report was enlarged by the addition of an exhaustive paper by Dr. D. Arthur Hughes which covers no less than 32 pages of this volume. These form the solid parts of the work of the important committees of the association. Those of the Executive Committee, of that on Legislation, on Necrology, etc., etc., follow. The long list of reports being completed by that of the resident secretaries and that of the Association of Veterinary Faculties and Examining Boards. The balance of the proceedings is made with the publication of the papers and discussions, headed by the address delivered by the Imperial German Special Commissioner for Agriculture, Mr. Nikola Kaumanns.

The record of the clinic is also very good.

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After this rapid glance at the good work performed during the four days that the meeting lasted, which certainly scarcely does justice to it, may I be permitted to make a few remarks and advance suggestions, not to criticise, but merely as I would have done had it been my good fortune to be present at Philadelphia.

I must confess that, when I received the "Proceedings," I looked at once for the report of the Committee on Intelligence and Education. I had seen published in our pages the reply of Dr. Tait Butler and I wanted to see what had been the arguments presented by Dr. Pearson. And now that I have read both and also those of the other gentlemen who took part in the discussion, I must say that while accepting some of the points presented and discussed by both parties I think that some can also be rejected. But that after all, if as it must be, the fact of the action of the Secretary of Agriculture in relation to veterinary

education is accepted, as it has been by the association in fact, we must look upon it as one step which one day or another had to be taken. It is a recognition of the importance of our profession, it is the first step in the ladder which we must hope will help to raise it to its proper standard. Let us also hope that it will not stop there, and that Secretary Wilson or his successors will continue and still improve! Of course there are objections. Of course there are opportunities for errors, for mistakes, and room for better actions, etc., etc. But the move is started. The profession has received an OFFICIAL stamp of higher importance than it has ever had before.

I do not know if the secretary will keep at his disposal the gentlemen of his original committee, but let us hope that he will surround himself with men who will look strictly after educational improvements above all, without any other objects in view than those of the GENERALITY! It is certain that the minimum of education for matriculation, mentioned in the circular, and of which so little has been said in Dr. Pearson's report and in the discussion, cannot be allowed so ridiculously low as it is. It must and shall be raised. It is probable that the curriculum of the schools, the duration of the studies, will have to be modified. But what has surprised me the most is the peculiar part relating to the appointment of the professors. Is it not strange, that while strengthening his position for the right of naming to professorship, graduates of a one school returning from a EUROPEAN POST-GRADUATE EDUCATION, and while objecting to the nomination of a *recent* graduate to a professorship, both of which are right, Doctors Pearson and Butler have not approached the only true and correct way to select a professor, viz., THE COMPETITION?

For one, I hope this step will settle the question one day!

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Among other communications I have had this month, I take pleasure to announce: The *Journal of Agriculture of the Cape of Good Hope*, which contains its generally useful information

and with them an article by Walter Jowett, F. R. C. V. S., on "Epizootic Pneumo-pericarditis in Turkeys," and one from H. Watkins Pitchford, F. R. C. V. S., on "Horse Sickness and Its Prevention." I have four Bulletins from the *University of Wisconsin* Agricultural Experiment Station, which contain from the pen of Dr. A. S. Alexander, an immense amount of most valuable information on the horse-breeding of the state with the laws relating to it. And then several little circulars from the B. A. I., and as I close this, the law establishing a veterinary board of examiners in Louisiana, for which Dr. J. A. Godwin tells me the ex-president of the A. V. M. A., Dr. Dalrymple, is the author. Good for Louisiana!

A. L.

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REMOVAL OF FOOT-AND-MOUTH DISEASE QUARANTINE.—The Secretary of Agriculture has issued an order, effective April 24, releasing entirely the quarantine for foot-and-mouth disease, as he is satisfied that the disease has been completely eradicated from the United States.

MORE than a million persons visited the Museum of Natural History, New York City, during the year 1908, which, in large part, was due to exceptional interest in the international tuberculosis exhibition. Steps are now being taken to make a special exhibition of the life and habits of the smaller organisms in relation to health and disease.

HEROISM DISPLAYED BY HOUSE CAT.—Firemen hard at work trying in vain to save two frame houses from destruction in Corona Heights, Corona, L. I., actually stopped their efforts to quell the flames for a few minutes to witness an act of heroism performed by an ordinary house cat. Five times she rushed into the cellar of the burning two-story house at No. 10 Fairview avenue, and each time returned to the grass in front of the house and tenderly deposited a kitten she had carried out in her teeth.

The kittens were scarcely more than a week old, and mother and all were gathered up by a neighbor, who assured the owners that they would have the best of care in her kitchen until their former house was rebuilt by the owner.—(*N. Y. Evening Telegram*, April 9, 1909.)

# ORIGINAL ARTICLES.

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## HEREDITARY OR TRANSMISSIBLE DISEASES IN HORSES.\*

BY DR. C. J. MARSHALL, PRESIDENT PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

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Certain defects in animals are known to be transmissible while others are so considered for the want of a better explanation. Tuberculosis was believed to be hereditary for centuries, but the searchlight of modern science has shown that this factor plays an insignificant part. The future will reveal the true cause of other diseases.

Governments and a number of states have adopted stallion registration laws for the purpose of improving type and soundness and to assist and encourage the breeding of better horses. In most cases the law attempts to prevent the use of horses that are off type or have hereditary or transmissible unsoundness or are afflicted with contagious or infectious diseases. Very few authorities state definitely what such defects are. Veterinarians often experience difficulty in passing judgment upon stallions for which licenses are requested and are frequently criticised for condemning or passing them as serviceably sound for the stud. At horse shows and fairs similar questions arise. Some may be afraid to exhibit valuable sires for fear that an unknown or abnormal condition might, unjustly, be considered hereditary and thereby ruin the reputation of the horse. For these reasons veterinarians should have decided opinions in reference to the most common defects and work uniformly, as much as possible, in passing judgment on horses for breeding or show purposes.

In order to collect evidence on this subject a circular letter was sent to about sixty well-known breeders and the same num-

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\*Read before the Annual Meeting at Philadelphia, March 2-3, 1909.

ber of veterinarians who have had experience in breeding. Their opinion was asked in reference to the following defects which are commonly believed to be hereditary: Vicious habits, blindness, roaring, emphysema, spavin, curb, ringbone, sidebone, navicular disease, osteoporosis, deafness, stenosis, light bone, contracted feet, faulty attitude of limbs, low back, weak coupling, cryptorchidism, springhalt, shivers and crampiness.

In looking over this list many defects will be seen that may be produced by accident. While it is not difficult for a person of experience to recognize some of them it is sometimes impossible to discover the true cause.

The subject of heredity is very complicated and it is not to be expected that the present generation will be able to solve all its mysteries. Many horses are sound from a breeding point of view that are not even serviceably sound for saddle or harness purposes. Conditions that are caused by accidents, overwork, bad care, and some acute diseases should not ordinarily condemn animals for breeding purposes yet they may render them practically worthless for work.

Let us review the etiology of the listed abnormal conditions and see what part heredity plays in producing them.

Vicious habits cover such defects as kicking, biting, running away, cribbing, weaving, balking, etc. Most authorities agree that traits of character are transmitted, yet it is known that in a large majority of cases such defects are due to bad handling and with proper treatment many horses with decidedly vicious habits will become the most amiable. Nature has apparently done her part well, yet man's ignorance has made it appear a failure.

Several breeders as well as veterinarians have seen cases where such habits were transmitted and consequently believe that they should receive serious consideration from a breeder's point of view. Dr. John V. Newton cites the case of "Marcus Claudius," a draft stallion that he owned. This horse had a mean disposition and 50 per cent. of his get were affected in the same way.

From the evidence collected it would appear that horses vicious by nature should be excluded.

In reference to blindness, two forms are questionable, viz., periodic ophthalmia and cataract. These diseases are much more prevalent in some sections of country than in others. A few breeders, as well as a number of the leading veterinarians, expressed positive opinions in reference to their being hereditary. In the Report of the Veterinary Examinations of Stallions by the Department of Agriculture, in Australia, cataract is listed as an hereditary unsoundness. In the human family cataract of childhood is looked upon as congenital, while cataracts that develop after maturity are not so considered.

Periodic ophthalmia is not seen in the human family and it is practically the only recognized cause for cataract in horses. In the great majority of cases periodic ophthalmia develops only after maturity. Congenital cataract has been known in foals.

Some of our text books and many of the most thorough investigators consider periodic ophthalmia as infectious and cite a number of interesting cases as proof. It would appear that there is more reason at present for excluding sires or dams afflicted with this disease on account of its infectious nature than from an hereditary point of view.

Roaring and broken wind are listed as hereditary by English and Australian authorities. None of the correspondents reported a case where the trouble was believed to have been transmitted. Dr. George White, of Nashville, Tenn., reports one sire and twenty-five dams that he has known to be roarers, but mentions none of their get that were affected with bad wind, yet he believes the disease to be transmissible under some conditions.

Prince Charley was condemned for the stud in England, but was purchased and brought to Kentucky by Mr. Daniel A. Swigert. He sired two crops of colts, but none of them had bad wind so far as is known. Among his get can be mentioned the well-known Salvator. Some of his get have also made good sires and transmitted his good qualities, but no roarers.

Ormande is another example of a horse rejected by England for roaring. None of his get, in either the Argentine or this country, have been reported as affected in the wind and a number of them are well known.

Roaring is found in all breeds and all families of horses. Many of the best draft stallions have been condemned on account of roaring. Some have developed this condition after being imported at great expense and were rejected from the stud for this reason. It is known that the disease often follows influenza, strangles, pneumonia, etc., and it also develops from unknown and mysterious causes.

Experience would indicate that horses should not be excluded from breeding on account of roaring alone, in the absence of a history of roaring among the immediate ancestors, especially if the conformation of the neck and throat are good. Though extreme caution should be exercised in the use of stallions so reported.

There is no clear recorded evidence for rejecting for breeding animals afflicted with heaves or emphysema.

Spavin was described by the oldest writers on the subject of veterinary medicine and the subject has received almost constant attention for hundreds of years. Many causes and theories have been advanced. They have been classified in various ways by different authors according to supposed causes and the pathological changes observed. At the present time a spavin is considered as a chronic inflammation of the hock joint. Möller justly says that it is a collective, clinical term covering a number of extremely diversified anatomical changes in the hock. We recognize bog and bone spavins. Bog spavins are soft, painless enlargements seen on the inner, outer, and anterior faces of the hock. They are the result of an excessive distension of the capsule of the hock joint with synovia. The contents of the enlargement may be forced from one point to another by pressure. The condition is sometimes called thoroughpin. It seldom causes lameness except when in the period of formation or after hard

work in cases of excessive distension. It may be seen in young as well as old horses.

Bone spavin usually appears as a hard, bony enlargement on the internal face of the hock. It may show on the posterior face where a curb develops. There may be heat, tenderness and lameness or the enlargement may be seen with none of the other symptoms present. In some of the most obstinate forms of spavin there may be intense lameness and no apparent enlargement. It may be observed in horses with hocks of excellent apparent or superficial conformation. For this reason spavin is often difficult to diagnose.

Bad conformation is one of the most common predisposing causes of spavin and such conformation is unquestionably hereditary. The conformation in which spavins are most often found is the narrow hock, too much cut out under the hock, sickle hocks, too wide conformation, and in which the horse stands too far back with the hind feet.

Defective hocks should be considered among the worst faults in a horse. Weak hocks, curbs, and spavins have often been observed in whole families. For these reasons the hock should receive the most careful consideration in an examination of horses for any purpose. Sires or dams with weak hocks, and especially so if they show curbs or spavins and families in which this fault exists, should be rigidly excluded from the breeding ranks.

In those cases in which curbs or spavins develop at an early age before the horse is put to hard work, breeding should not be permitted. Yet it does not seem just to establish a law that would exclude from breeding all horses that have spavins or curbs. When such unsoundness are developed after maturity and especially if it can be shown that the conditions are due to injury or excessive strain and that the animals are from good families, are of the proper type and have good conformation they should not be condemned.



Of 813 stallions examined by the Australian Commission 17 were rejected for bone spavin, 5 for bog spavin and 11 for curbs. In the number examined 358 were draft horses and 270 light driving horses. Of the draft horses 3 were rejected for bone spavin, one for bog spavin and none for curbs. Of the driving horses 13 were rejected for bone spavin, 4 for big spavin and 6 for curbs. It does not state whether any consideration was given to conformation or age. It is presumed that they were rejected for these faults regardless of cause.

When considering the subject of ringbones many reasons will be observed why horses afflicted with them should not be condemned indiscriminately. Ringbones may be caused by faulty shoeing, strains, or traumatism, and, if so, the horse having them should not be excluded, especially where the animal has good conformation and other desirable qualities.

Ringbones, as spavins, are looked upon as serious defects and like them may be due to a faulty conformation, and in this case the horse should be condemned. Long, thin pasterns, or very short, stiff, upright pasterns, and the base wide, base narrow, two wide and two narrow conformations are defects that predispose to ringbone, and conformation of this type is pretty sure to be transmitted. Horses with such faults should be excluded whether ringbones are present or not. Horses that have developed ringbones before reaching maturity or before hard work has been done should also be rejected.

Of the stallions examined for a license in Australia 8 of 358 draft horses and 3 of 270 light driving horses were condemned for this reason.

Sidebones are conditions in which the lateral cartilages of the foot become ossified either partially or completely. Heavy, coarse-bred horses are especially predisposed to develop them. They are seldom seen on the hind feet. The left front foot is more often affected than the right and the inside cartilage less often than the outside one.

Lungwitz, who examined 1,251 horses, found 144 of them affected with sidebones as follows:

|                                        |     |                |
|----------------------------------------|-----|----------------|
| Of 98 Belgian cart horses.....         | 68  | had sidebones. |
| Of 120 Danish carriage horses.....     | 25  | “ “            |
| Of 388 Heavy riding horses.....        | 36  | “ “            |
| Of 132 Other heavy riding horses.....  | 0   | “ “            |
| Of 133 Light riding horses.....        | 8   | “ “            |
| Of 140 Riding horses of all sizes..... | 3   | “ “            |
| Of 200 Military horses .....           | 1   | “ “            |
| Of 40 Officers' horses .....           | 3   | “ “            |
| <hr/>                                  |     |                |
| 1,251                                  | 144 |                |

Of the 813 stallions examined by the Australian Commission 80 were rejected on account of sidebones as follows:

|                           |    |                |
|---------------------------|----|----------------|
| Of 358 Draft horses ..... | 77 | had sidebones. |
| Of 270 Light horses ..... | 3  | “ “            |
| Of 185 Ponies .....       | 0  | “ “            |
| <hr/>                     |    |                |
| 813                       | 80 |                |

In answer to my circular letter, two correspondents would and eight would not reject horses afflicted with sidebones. The Australian Commission has observed the transmission of sidebones from sire to sons and from son to grandsons. In one case they examined twelve stallions from one sire and eleven of them were condemned for this defect. One of the best arguments in favor of the transmission of sidebones is the fact that in some whole families of heavy draft horses none are found.

When veterinary inspection was adopted by the Royal Shire Horse Society it was found that 33 per cent. of the show horses had sidebones. They were found more common in the coarse Shire type than in the cleaner-boned Clydesdale.

There seems to be the greatest diversity of opinion among veterinarians in reference to sidebones. Some, and among them Dr. George H. Berns, look upon them as very trivial defects, and

from observations made for many years on draft horses especially believes that a horse is but very slightly more liable to go lame with sidebones than without them. While according to others a horse is as liable to work sound on city pavements with ringbone as with sidebone.

Möller recognizes three principal causes. The first is a congenital predisposition in heavy, coarse-bred horses; the second is excessive concussion produced by work or hard roads; the third is due to shoeing with calks, by which the frog is prevented from taking any bearing on the ground and the lateral cartilages are subjected to a continuous, downward strain.

Horses with sidebones cannot be passed as sound for hard work on the city pavements. They are not infrequently seen on green draft horses fresh from the country. While we must admit that many horses with sidebones are serviceably sound yet a large percentage of them will go lame as a direct result of this defect or from secondary diseases of the hoof coming therefrom. It would appear that we are justified in condemning stallions for breeding purposes when sidebones develop before they have been shod or have done heavy work on hard roads.

Very few of my correspondents expressed positive opinions in reference to the transmissibility of navicular disease. Dr. Edgar Powel mentions a mare that he owned and used for breeding purposes that he believed to have had this disease for twelve years. The diagnosis was not confirmed by post-mortem examination. She was bred to a thoroughbred stallion once and four times to a hackney. Most of the colts were unusually good. Two at least were show horses. All of them developed into sound saddle and harness horses, worked hard, and none of them ever showed a symptom of navicular disease. On the other hand, equally convincing cases that showed a hereditary tendency were cited by other veterinarians. It may require months to make a positive diagnosis of navicular disease and it is then best completed by an autopsy. The condition is practically incurable, and in advanced cases neurectomy is the only means by which the animal's usefulness may be prolonged.

Cadiot reports that out of 403 horses brought to the Alfort clinic from 1896 to 1897, 106 were suffering with different affections of the feet and navicular disease was diagnosed in six. Probably about one per cent. of a veterinarian's practice will be navicular disease. Contracted sole may show practically the same symptoms, and is often associated with it. Contracted sole is curable in uncomplicated cases and the animal can be restored to soundness. The Australian law does not list navicular disease as transmissible.

It is most often seen in well-bred horses; in draft horses seldom, and it appears usually in the front feet and most often in horses with deep, steep, contracted heels, yet it is often seen in feet of the best conformation and has been found in the hind feet.

The causes mentioned by Möller are heredity, traumatism and metastases. As metastatic causes, diarrhoea, various general infections as strangles have been suspected. Direct violent traumatism may play a small part in the production of the disease, but the usual cause is the traumatism of wear; the pounding and strain of work.

The pathology of the disease is fairly well understood, but as to cause, prevention and treatment there is still much to be learned.

It would appear just to condemn, for breeding purposes, horses afflicted with this disease where it has developed from small cause, where it is of long standing and both feet are effected.

Osteoporosis is one of the listed hereditary unsoundnesses in the Australian law. From observations made in this country it could not be so considered. Many cases sent to the country recover and so far as could be learned no outbreaks have occurred in sections to which such cases have been sent.

Several bad cases of big head in fillies were sent to Mr. Henry Fairfax in Virginia from near Philadelphia. All made a

complete recovery by the time they were five years old. They were regularly bred and the disease never appeared in their colts on the farm.

If osteoporosis is due to infection or malnutrition as many investigators believe at present, there is no reason for considering it hereditary. The evidence is, however, strong in favor of the theory of infection, and warrants breeders in isolating or destroying well marked cases.

The following quotations from an article written by M. J. Basset, of the Alfort School, and printed last year in the *Recueil de Medecine Veterinaire* on the subject of "Osteomalacia" is as follows: "Osteomalacia is common in man, horse, ox, goat, sheep, swine, dog, rabbit and rat.

The disease is known by various names which change with investigators according to the way that the symptoms and alterations strike their fancy. The term "osteoporosis" implies that after macerating and drying the bone is porous and light. "Osteomalacia" implies fragility of the bones or that they break easily. "Osseous cachexia" is a state of profound misery in which the patient is not able to take the necessary amount of nourishment. In swine it is known as gout or foot disease. "Sniffles" is a term often applied to it in swine when the nasal cavities are restricted by the increased thickness of the vomer and the other bones of the head which restrict the air passages and cause loud breathing.

In horses it is sometimes called "Bran Disease," because it develops often in Switzerland and Germany in millers' horses which are fed freely on bran.

We prefer the term "osteomalacia," because the partial or total softening of all the bones of the body described by the first observer is always present. We believe that it is logical to reserve this ancient designation until the true cause of the disease is discovered and it can be given a more precise and suitable name.

The list of predisposing causes is rather long. One finds, as in all infectious diseases, circumstances for diminishing the re-

sistance of the organism. The determinate cause of osteomalacia is still unknown. The solution of the problem should appear soon for the reason that Mousau has reproduced the disease experimentally in swine and goats. Mousau and Charrin have reproduced it in a rabbit. This was done, says Mousau, either by cohabitation with an affected animal or by the subcutaneous inoculation of the bone marrow during the beginning or the active period of the disease.

In a preliminary communication to the Academy of Medicine of Turin, February 2, 1906, Morpugo gave the results of numerous experiments on young and adult white rats. In these experiments, which were begun in 1899 and partially reported in diverse publications, the author produced the disease at will, either by cohabitation or by the inoculation of germs supposed to be diplococci isolated from subjects that were affected with the disease. Observations are numerous which indicate clearly the infectious nature of osteomalacia.

In 1874 Paul Bouley summed up the many observations on the subject of osteomalacia in man and domestic animals. He wrote, at that time, that the only therapeutic proceedings that had rendered service was emigration from the place where the disease developed or removing the animal to a richer locality. It is now known that the richness of the soil has nothing to do with curing the disease. Captain Robertson, in an article on "Osteoporosis" in the *Veterinary Record*, says in reference to affected horses that they recover by simply removing them from the infected district without even changing the food. No treatment is effectual except a complete change of location. He cites a village where it was proven that the disease was imported by a race horse. Pecaud cites a similar case. At one time the disease was recognized only in the state of Dape Cau, Indo-China. The afflicted animals were sent to Sontay where they improved or recovered. For the past three years Sontay has been badly afflicted with the disease.

In regions where the disease is epidemic it has been attributed to the soil, climate, etc. At times droughts or too much humidity may play a part, yet the disease is not found alone under these conditions.

No information was received on the subject of deafness.

The following is an interesting instance of inherited unsoundness:

The black mare, "Ebony Belle," made a few sensational appearances in the show ring. She developed suddenly a severe lameness in the near hind leg at the Philadelphia show. The condition was considered as a light attack of azoturia. She recovered fully in a few minutes, but developed the same condition in her next show appearance which was at the Garden the following fall. Again the veterinarians diagnosed azoturia and horsemen called it "kidney shot." She was retired from the show ring, but would develop the same peculiar lameness whenever she was exercised. She was bred two years and not driven or ridden during the time. She had two foals which developed the same character of lameness soon after being broken. The writer suspected stenosis of the external iliac artery in the dam and by a rectal examination verified the diagnosis. She was then destroyed. The diagnosis of stenosis in the case of the foals was made by the history alone. It would appear that the trouble in them was plainly due to hereditary cause.

Lightbone, faulty attitude of limbs, low back and weak coupling are faults of conformation. There can be no question but that defects of this character can be transmitted. Breeders should not use such animals. Stallions with these defects should be classed as nondescript specimens and those that do not possess true race characteristics, are off type, etc., should be prevented by law from service in the stud.

Contracted feet may be the result of bad care or improper shoeing and if so would not be transmissible. Where it is known to be a faulty characteristic or a congenital defect it is looked upon as transmissible.

Cryptorchids and monorchids are usually spoken of as ridglings. There is difference of opinions among breeders in reference to this condition being transmitted. The operation of gelding them is not well understood by the average castrator and fatalities are more common than in the normal operation. For this reason breeders should consider the advisability of using ridglings.

The true cause and pathology of stringhalt, shivers and crampiness are not known. Stringhalt is sometimes seen with spavin or a defective hock and if so should be rejected. No cases were reported where sires or dams with these defects were bred and no opinions were given in reference to their transmissibility.

It is hoped that the subject of hereditary diseases will receive more united study in the future. This question should interest breeders and veterinarians. Our profession will be called upon in the future more than in the past to give opinions in reference to it.

Stallion registration laws are beginning to be recognized as necessary and wherever they have been intelligently enforced there is a marked improvement in the type and character of horses.

A nondescript brood mare can do but little damage compared to the harm that such a stallion may cause in a breeding district. The ideal horse should be free from defects of all kinds, but great injury or injustice would result to the breeding industry if only such perfect animals were allowed to breed for the reason that there are so few perfect animals. To know how far one can safely go in overlooking defects is a difficult question. If we had true statistics on all that might be known in reference to the subject we would be better prepared to make laws and regulations for the future. We should attempt in all possible ways to collect true facts on this important subject.

In the meantime, laws disqualifying horses from breeding on account of unsoundness should be conservatively drawn. The following is the Pennsylvania statute of 1907 on this subject:



Stallions afflicted with hereditary, contagious or transmissible unsoundness or disease may be refused license by the State Live Stock Sanitary Board; and when license is so refused the said stallion shall not be used for public service for profit or gain in this state, provided, however, that a license may be refused under this section only when it is certified to the Board by the State Veterinarian that the stallion in question is afflicted with an hereditary, contagious or transmissible unsoundness or disease of such a nature, or that the abnormal condition is accompanied by such a defect or conformation, as to render it probable that the progeny of the said stallion will be especially liable to said unsoundness or disease. Blemishes and deformities due to accidents shall not be regarded as unsoundness within the meaning of this act.

#### DISCUSSION.

Dr. Radley—In your opinion, do you think a stallion would be refused registration because of heart disease, and should he transmit roaring to his progeny?

President—There are a great many good horses who have been bred from horses who are roarers. The heart trouble may be transmissible. I should not consider it so unless it were due to congenital cause or due to accident as from influenza. I do not think it would be permissible.

Dr. Harger—I think that horse should be condemned by all means. I would condemn it for roaring. The condition of the heart might be acquired over which the animal had no control whatever. They may have hypertrophy from infectious disease.

Dr. Radley—Do you think the roaring would come from a hypertrophy because of nerve connection, the recurrent nerve?

Dr. Harger—The same infection that gave the horse a hypertrophy of the heart might have caused the roaring. The condition Dr. Marshall spoke of of a horse brought into this country, condemned in England because of roaring, and recovering in this country and producing good get. It is a question whether they were justified in condemning him. A number of horses

have been brought from England who were not able to race in England, but raced well in this country. I do not believe that was real roaring. I mean due to paralysis of the recurrent nerve. If he has roaring in England he is a roarer in America. We might explain this by saying it might have been a natural weakness of the muscles of the larynx which caused a slight tickling because of the damp moist climate in England. No disease, just a condition in which the muscles were not quite as strong. That differs just enough with a damp, foggy air; in this country where the air was dryer, less moisture, larger percentage of oxygen, the muscles were powerful enough to dilate the air vessels to admit air enough and prevent roaring. There would be no legitimate argument in that case of producing a roaring get.

Dr. Rectenwald—I would like to ask Dr. Marshall did he ever see a roarer that had neither hypertrophy, but had tumor in mediastinum? I had a case of that kind. The man had a horse of jet black, fine animal, weighed probably 1,500. The horse did not show any sign. All at once he commenced to roar. I could not find any trace, the temperature did not rise any. I invented a tube and put it in and out a one and a quarter opening.

President—I wish this subject might be continued at our next annual meeting. I think it would be well worth our while to study it, so we might get where we belong on the subject of transmissible diseases.

Dr. Radley—I believe, after a series of years of observation, that there is a condition of the bone beyond the strain of the tension on the part which causes a predisposition to spavin or ringbone or any exostosis. Of course, I admit that the strain on that point brings about a condition, but beyond that I think there is a condition of the bone, in the bone cell, that is bred in that bone, that partly causes the trouble.

President—How do you get around this, you find the best quality of bone in thoroughbreds, you find spavin, in the best kind of bone in the skeleton at least?

Dr. Radley—You cannot make the diagnosis from external appearances.

Dr. Hoskins—The other point is the fact that the animals you quote are put to the most severe kind of work and without regard to their fitness for doing work at the time these accidents occur.

President—In thoroughbreds you will find spavins and ringbone before they have ever been on the track, but you don't find draught horses that way. I think if you take draught horses and the ordinary thoroughbred you will find spavins on the thoroughbreds and you will not find them on the draught horse.

Dr. Harger—I would modify that a little bit. In regard to the statement of finding spavin in horses of fine bone. You may have draught horse with spavin. You will find bone and bone. If you will find good, hard, silky bone, unless that horse is put to extreme use, I don't think he is going to throw out ringbone. Take the horses Dr. Marshall speaks of, they are made of cotton. They inherit it from some faulty quality in the bone of some ancestor. They don't have good bone. But take the ideal thoroughbred, with clean, fine bone, whose ancestors have been free from defect, that is the kind of horse in which we are the least apt to find bony growth. I see these things in the clinic. We have horses coming in with every bony trouble they can have. On two, three and four legs. I generally find they are horses that belong to the lymphatic type; they are thick skinned, the joints are full of connective tissue. The joints are not clean, the bony tuberosities are not clean. It is not the fine, clean bone that you find in the thoroughbred. When you find the conditions Dr. Marshall describes, I believe you are dealing with a thoroughbred of faulty bone.

Dr. Marshall—I will admit you will find them in the best thoroughbreds and in the worst.

Dr. Rectenwald—I think we better come down, we don't need that kind of horse. We want good, sound horses.

President—My paper might lead you to be too liberal if you follow it. It is not my intention that we leave ringbone and spavin in the list, but I did write it to show that we should not condemn everything. I think you will make mistakes and get the horse men down on you if you are too particular.

Dr. Radley—We cannot afford to cater to the horse men if it is the truth.

Dr. Hoskins—I move that this discussion be continued over to the semi-annual meeting.

Carried.

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THE veterinarians throughout New York State will be pleased to learn that assembly bill number 221, amending the law relating to the practice of veterinary medicine in the State of New York, passed the Senate April 21st, and, with the Governor's signature will become a law.

VASECTOMY FOR CONFIRMED CRIMINALS AND DEFECTIVES.—The sterilization of criminals and defectives by vasectomy is becoming a live question in many directions. This method of combating the transmission of criminality and other mental defects—a peril that has assumed such proportions as to arouse the attention of most civilized countries—has now been in use in Indiana for two years, and recently has been legalized in Oregon. The matter has been taken up by the Chicago Society of Social Hygiene, with a view to public education thereon and the introduction of some similar measure in the State of Illinois. There is a bill (No. 249) now in committee of the Illinois senate which appears to cover the ground, though the words "or castration" might with advantage be omitted, as tending to arouse needless opposition. The state's concern in the matter is limited to the prevention of procreation of hereditarily defective offspring, and this appears to be perfectly effected by the safe, harmless, non-mutilating operation of vasectomy. There are doubtless many who realize the necessity for some measure that will limit the output of ready-made potential criminals and defectives, who, nevertheless, are strongly opposed to what they consider the barbarous practice of compulsory mutilation, and these will have little fault to find with vasectomy.—(*Journal of American Medical Association*, April 3, 1909.)

## THE SECRETION OF MILK.\*

BY PIERRE A. FISH, N. Y. STATE VETERINARY COLLEGE, ITHACA, N. Y.

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Of the various secretions found in the animal body none is of greater practical or direct interest to humanity than that from the mammary gland. For a greater or less period after birth milk is the only food with which the young animal can be nourished. During this period the young animal thrives and gains in weight at a more rapid ratio than at any other time during its existence. This fact indicates that the nutritive constituents of milk are arranged in the best proportion not only as to digestibility and to satisfy the requirements of the tissues, but to stimulate them to greater activity as is evidenced by the phenomenon of rapid growth.

In the human being and monkeys a single pair of mammary glands are present and are located on the thorax; in the cow and horse they are located on the abdomen, while in the pig, bitch and cat they are located on both thorax and abdomen. The latter animals bring forth their young in litters, but there is not necessarily any correlation between the number of the young produced and the number of glands present.

The glands do not become active until the end of pregnancy or the birth of the young. The first excretion, known as colostrum, differs in some interesting particulars from milk. It contains a considerable amount of albumen, little or no caseinogen and numerous so-called "colostrum corpuscles," which are probably mast cells or leucocytes. It is believed by many that the colostrum has some purgative action and serves the purpose of clearing from the alimentary canal the material that has accumulated in it before birth. After a short time the constituents of the colostrum change, as the secretion goes on, to form true milk.

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\* Read before the New York State Veterinary Medical Society.

That there is an intimate relationship between the activity of the mammary glands and the generative organs of the female there can be little doubt. Starling, an English physiologist, has demonstrated very recently that when an extract made from a foetus was injected into the tissues of a virgin female that the mammary gland became active and a secretion of milk was actually produced, thus indicating that in the foetus there is some substance or property which has a direct action upon the mammary tissue.

The mammary glands are undoubtedly epidermal structures. They are comparable in development to the sweat or sebaceous glands. It is not clear with which set of these glands they should be homologized. In the albuminous and fatty constituents of their secretion they would suggest a relationship to the sebaceous glands, but histologically the single epithelial layer of the alveolus points to a connection with the sweat glands.

The fact that the various constituents of milk are not found as such in the blood or lymph indicates that the gland cells are actively concerned in the production of the secretion.

The cells themselves present different appearances according to the activity of the gland. In the resting period the cells are flattened or cuboidal in form. They present a somewhat granular appearance, show but a single nucleus and have few or no fat globules in them. When the active formation of milk occurs the cells increase in length, projecting toward the lumen of the gland, the nuclei divide and many of the cells contain two or more nuclei.

Fat droplets develop in the protoplasm, especially in the free end of the cell. The granules, which in the resting cell are spherical, appear to elongate and assume a somewhat threadlike form. The climax of this change occurs when a portion of the end of the cell undergoes solution or disintegration and passes into the lumen of the alveolus. The fragments of this disintegrated portion of the cell help to form the secretion; part of it goes into the solution to form, probably, the albuminous and carbohydrate constituents, while the fat droplets are set free to

form the milk fat. Apparently the fixed portion of the cell regenerates its protoplasms and thus continues to form new material for the secretion. In some cases the whole cell may apparently undergo dissolution, in which case its place is taken by a new cell formed by the cell division of one of the neighboring cells.

The composition of milk varies considerably in the different species. The secretion may vary at times in the same individual, according to diet, exposure, temperament, etc. The richest milk appears to come from the bitch, the poorest from the mare. Human milk is richer in sugar and poorer in protein than cow's milk, but the fuel value is about the same.

*Composition of Milk.*—The chief bulk of milk is water which may vary in unadulterated milk from 90% in a poor product to 84% in an unusually rich milk. The corresponding solid matter, or "total solids," therefore, varies from 10% to 16%. The solid matter, or "total nutrients," is made up of protein, fats, carbohydrates, and mineral matter. The proportion of these varies within certain limits, but, roughly speaking, one-twentieth of the total solids are mineral substances, one-fourth protein, three-tenths fat, and four-tenths carbohydrates.

The principal protein or nitrogenous compound of milk is casein. When the milk is drawn from the cow this is in the form of caseinogen, but it undergoes changes which convert it into casein. In chemical composition the casein differs from the other protein compounds of milk in that it contains both phosphorus and sulphur. Beside the casein there is a certain amount of albumin present called lact-albumin which is quite similar to the albumin of the blood or the white of egg. The quantity of lact-albumin is very much smaller than that of the casein, averaging about one-seventh of the total protein. There are also insignificant quantities of other nitrogenous substances present. The total protein of milk should not vary greatly. It will average not far from 3.3% of the whole milk, or about 25% of the total solids.

The milk fat is commercially the most important of its constituents as it is the source of butter and enters largely into the composition of cheese. Chemically, the fat of milk, or butter-fat as it is more often called, consists of several different fats. The chief of these are the same fats that are found in fat meat (tallow, lard, etc.), as well as many vegetable fats. They are called stearin, palmitin and olein. Besides these three fats there are others in smaller amounts, but of considerable importance, because it is to them that the flavor and aroma of the butter and cream are due. The amount of fat in milk varies widely. The amount of fat should not fall below 3%, and, except in unusually rich milk, will not exceed 5%. Good, unadulterated milk from a herd of well-fed cows should average not far from 4% of butter-fat, or about 31% of the total solids of the milk.

The chief carbohydrate in milk is lactose or milk sugar. This sugar is similar in chemical composition to cane sugar, but is not nearly so sweet. Commercially, it is largely used in medicine as a basis in powders, pills and tablets. In amount, it ranges from 4% to 6%, but on the average may represent about 5% of the milk, or about 38% of the total solids.

The color and opaqueness of milk are due mainly to globules of fat which are very minute and are almost innumerable. These are held in suspension in the liquid in the form of an emulsion; but, since they are lighter than water, after the milk has stood for some time, they gradually rise to the surface and thus accumulating form cream.

When milk has stood for some time the milk sugar undergoes decomposition, whereby lactic acid is formed and the milk becomes sour. With the souring of milk there is a change in its consistency and it becomes thickened or curdled.

The use of sour milk as a therapeutic agent is growing with the medical profession. It appears to possess useful properties as an intestinal antiseptic. Its continued use has been recommended by Metchnikoff as maintaining the health and prolonging the life of the individual. The souring of milk can be ef-



fects by the addition of an acid, vinegar for example. When milk thus curdled is neutralized with some alkali, such as lime-water or soda, the curd is redissolved. Milk is also curdled or coagulated by rennin and the curd thus produced is used in the manufacture of cheese. Unlike that of ordinary milk this curd is not dissolved by the addition of limewater or soda.

When milk is boiled a film or scum forms upon its surface. The heat causes a coagulation of the protein, chiefly the albumin, and possibly to some slight extent a portion of the casein. If the film be removed and the milk again heated another film will form and this may be repeated a number of times.

Milk is slightly heavier than water, its specific gravity ranges from 1.029 to 1.034 at 60° F. This means that while a quart of water weighs 2 pounds 1⅓ ounces, a quart of milk weighs from 1.029 to 1.034 times as much, or not far from 2 pounds 2½ ounces. The specific gravity depends upon the proportion of water and other substances. Since the fat is lighter than water the richer the milk is in butter-fat the lower its specific gravity, provided that the other solids are not increased proportionally. It follows, also, that the removal of the fat increases the specific gravity, so that skim milk has a specific gravity of from 1.033 to 1.037. On the other hand, the addition of water to skim milk brings down the specific gravity.

There is probably no other food which is liable to a greater variation in its composition than the milk supplied to the consumer. The variations are so great that one man may pay nearly twice as much as his neighbor for the same amount of nutriment when both buy it at the same price per quart. The causes of such variations are quite numerous, among which may be mentioned adulteration by the addition of water or the removal of a portion of the fat. Variation is also dependent upon the breed and individuality of the cow, the methods of feeding and handling and the length of time since calving.

If the health and vigor are as good, young cows generally produce richer milk than old ones. A well-fed cow gives more

and better milk than one which is poorly fed. The average cow of a given breed possesses certain capabilities for producing milk, but does not reach her normal standard of production unless she is well fed. The composition of the food does not appear to greatly influence the relative proportions of the fat, casein and sugar. When once the cow has a sufficient and well-balanced ration, neither the composition nor the amount of the milk yield appears to be greatly improved by either increasing the ration or changing the proportion of its ingredients.

The flavor of milk is frequently affected by the food eaten by the cow. It is a well-known fact that turnips when fed to cows give a peculiar taste to the milk. Certain medicines may produce similar results and may also produce medicinal effects upon the calves suckling from them.

As a food, milk is well adapted for use by man. It contains all of the four classes of nutrients—protein, fats, carbohydrates, and inorganic matter—in more nearly the proper proportion to serve as a complete food than any other food material, although no one substance can serve as a complete food for an adult. It is in a form well adapted for varied uses, either alone or more especially in combination with other food substances, and in the preparation of various dishes for the table. Its use is already considered indispensable in many such cases and it might profitably be used in many more. At the price paid ordinarily for milk in the large cities it is a food of reasonable cheapness, and at the prices prevailing in small cities and country towns it is an economical food.

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I HAVE accepted an Inspectorship with the Department of Agriculture and my address will be North Portal, Saskatchewan. I am anxious not to lose a copy of the REVIEW.—(G. H. Acres, V. S.).

THE Legislature of Colorado has passed the Veterinary Practice Act. It is said to be a much stronger bill and to afford better protection to the veterinarian and to the public than the law now in force.

## PROFESSIONAL ETIQUETTE.

BY DR. W. A. DUNBAR.

Paper read before the Veterinary Association of Manitoba, Feby. 16, 1909.

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Mr. President and Gentlemen—In fulfilment of a rash promise made by me at the last semi-annual meeting of this Association, I have made an effort to prepare a short paper on a subject which I hope will be more or less interesting to the members present at this meeting. After due consideration, I selected "Professional Etiquette" as the basis of my remarks. Professional etiquette, as I understand the term, comprehends the bearing, attitude and general conduct of a professional man towards his fellow practitioners. Having had thirty-three years' experience of professional life, I will take the liberty of relating some personal observations on the subject under consideration. During that comparatively long period I have been in contact with many co-practitioners, and have had ample opportunity of judging as to the mental, moral and professional status of many of them.

In taking a retrospective view of my experiences with my professional brethren I am forced to the conclusion that we veterinary surgeons are, in some instances, fish of a curious scale. In making this statement I do not wish to insinuate that undesirable peculiarities are more prominent in the characters of veterinary surgeons than they are in those of the human race generally. The members of the veterinary profession, like those of every other profession, are drawn indiscriminately from the great human family, and they are therefore possessed of all the faults, frailties and pure cussedness, together with some of the more desirable mental and moral heirlooms of fallen humanity. If a man is born a gentleman, no matter if his advent into this world took place in the midst of comparatively poor surrounding, a gentleman he will probably remain throughout the term

of his earthly career, irrespective of educational influences; but if a man is born a boor, even in the midst of affluence and with the proverbial silver spoon in his mouth, a boor he will probably remain during the period of his natural existence, notwithstanding the educational advantages, veterinary or otherwise, which it has been his privilege to receive. In his case the truthfulness and applicability of the Scriptural axiom "The Ethiopian cannot change his skin, nor the leopard his spots," is abundantly verified. It is very evident that both the classes which I have just mentioned are represented in the veterinary profession. There are those in our ranks, I am glad to state, whose behavior towards their professional brethren is marked by good will, good fellowship and a full recognition of the rules which should govern the words and actions of professional men towards each other. At the risk, however, of being considered unnecessarily censorious, I am constrained to state that we also have within our ranks men who, apparently have not yet learned the simplest rudiments of professional etiquette. Men who strenuously use every effort to gain practice and to establish a reputation, spurious though it may be, by encroaching on the rights of their fellow practitioners and by insinuation and innuendo endeavoring to detract from their good name. The crest of this class of individuals appears to be a skunk and carrion crow united, and motto "every man for himself and the devil for us all."

In days gone by when the veterinary profession was chiefly in the hands of charlatans and mountebanks, when the main accomplishments of the so-called "horse doctor" were swearing, smoking and chewing tobacco, drinking, telling yarns and talking "hoss," and when his medical and surgical knowledge did not exceed the limit of bleeding, blistering, gelding and physicking. Under such conditions one could not expect to find any observance of the rules governing professional etiquette. But, in this eminently progressive age, we find that the practice of veterinary medicine and surgery has been elevated to its rightful place as one of the learned professions. This being the case,

we, its members, should strive to uphold its dignity, not only in an educational sense, but in our deference for, and general bearing towards, each other as professional gentlemen, always keeping in view the fact that our words and actions are noted and commented upon by our clients and by the public at large.

The veterinary profession has, during the last two or three decades, been dignified and popularized by the scientific research of many of its eminent members. This is pre-eminently an age of progress in the scientific arena, and in no department of science is progress making more rapid strides than in the branch which we as veterinary surgeons represent. The theory of micro-organisms, causation of contagious, infectious and other diseases has been principally established by experiments made on the lower animals, and it should afford us inspiration to know that many experiments have been successfully conducted, and many important discoveries have been made in this line, by veterinary surgeons. The veterinary profession is specially progressive in its tendencies, and it has already done a great deal towards alleviating suffering among the domesticated animals, and in stamping out some of the more serious diseases to which they are specially liable; and has therefore greatly enhanced the prosperity of stock-breeding countries and communities. As members of that profession, let us instead of backbiting each other and endeavoring to tarnish or belittle each other's good name, put our shoulders to the wheels of its upward and onward progress. True we cannot all become brilliant luminaries in our profession, but we can all exercise the natural and acquired gifts with which we are possessed in a manner which will be more or less profitable to our clients and ourselves, and which will give no occasion for criticism on the part of our fellow practitioners.

I will close this somewhat rambling paper by mentioning a few things which, in my humble opinion, are not quite in line with a strict observance of professional etiquette:

First. When a consulted veterinarian has given his opinion of a case in the presence of the owner of the animal and the vet-

erinarian in charge, in which he heartily commends the treatment pursued, but afterwards privately insinuates to the owner of the animal that had it been his case he would have treated it somewhat differently.

Second. When a veterinarian, by request, or not by request, of the owner, visits a patient without the consent or knowledge of the attendant veterinarian.

Third. When a veterinarian solicits the patronage of a stock owner, being at the same time well aware that said stock owner has for years employed, and does employ, the services of another veterinarian.

Fourth. When a veterinarian, while standing at a street corner, hails a passerby, who may be driving a lame horse, or a horse with an excoriated neck or shoulder, and announces himself as a veterinary surgeon, saying at the same time that he can cure the horse of his ailments. Such conduct on the part of a qualified veterinary surgeon may not be, in a strict sense, a breach of professional etiquette, but it certainly savours a good deal of quackery, and is degrading to the profession.

Fifth. When a veterinarian, through jealousy or some other equally sinister feeling, so far forgets himself as to speak of a fellow practitioner, behind his back, of course, as being an "old granny," an "old lady," a "back number" or some other epithets equally elegant.

Sixth. When a veterinarian by word or action, or in any other manner wilfully attempts to depreciate the good name of a fellow practitioner, for the express purpose of building up his own reputation.

Seventh. When a veterinarian for a paltry bribe from the vendor of an animal will pass that animal as being sound, when he knows it is unsound, and thus betray the confidence of his client.

We veterinarians are human, some of us very much so, and when we have conclusive proof of the unprofessional conduct of a brother practitioner towards us, our human nature sometimes

asserts itself and prompts us to retaliate when an opportunity presents itself. Retaliation is, however, under any circumstances, unwise, as it only serves to perpetuate strife and ill feeling. To use a common expression "life is too short" for us to make it unpleasant for ourselves and others, by either our conduct or conversation. Gentlemen, let us commit to memory the golden rule, "Do unto others as ye would that they should do unto you," and practice it.

I BELIEVE that no up-to-date veterinarian can afford to be without the REVIEW—the best exponent of veterinary science in America.—(*Wm. Drinkwater, V.S., Monticello, Iowa.*)

THE Kansas City Veterinary College is clearing ground for the erection of an additional college building which will cost approximately \$75,000. This building is to be constructed of reinforced concrete and will provide several class-rooms, a large library room, a gymnasium, and a general assembly room with a seating capacity of about 1,200. The enrollment during the last college session of over 500, with a correspondence pointing to a still larger enrollment for the oncoming session, has necessitated increased and better facilities. Kansas City is in the centre of a vast agricultural district which is yet sparsely provided with qualified veterinarians, and the management of the K. C. V. C. intends to do its part toward qualifying men to meet the needs of this great agricultural section of our country.

USE NATURE'S MEANS TO RETAIN THE UTERUS AND RECTUM.—I have discovered a means of retaining in the prolapse uterus and rectum of animals, nature's instrument, which is far superior to any means I have yet seen or heard of, and has been very effective in my hands, being a success in every case. I find all that is necessary is to take a broad bandage or rope and tie to the tail of the horse, cow or dog high enough up on the tail so that the two ends of the rope or bandage when taken between the legs of the animal, and tied over the back, that the tension will be sufficient to pull the tail down snug. The animal cannot very well strain and force out the uterus or rectum when the tail is tied down snug; it has to first raise the tail. The animal can have a passage of the bowels and bladder with the tail tied down. I keep it tied about forty-eight hours and by that time everything has adjusted.—(*Mark White, V.M.D.*)

## REPORTS OF CASES.

*"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."*

### ECHINORHYNCHUS CANIS.

B. F. KAUPP, B.S., D.V.S., Pathologist, Veterinary Department Colorado Agricultural College.

The object of this article is to report the finding of a parasite which appears to be an unnamed species. Four specimens of a worm taken from the intestines of a dog were sent to me by Dr. J. W. Parker, of San Antonio, Texas, for classification. Figure 1 shows the adult



FIG. 1.—Echinorhynchus Canis. Natural Size.

a.—Cephalic extremity.  
b.—Caudal extremity.

worm in its mature state. It will be noted that it measures one-eighth of an inch in diameter and one-half inch in length. It has a few transverse markings which appear to be wrinkles in the cuticular surface rather than regular and definite rings. The cephalic extremity tapers rather abruptly, in this respect resembling the Echinorhynchus Gigas of the hog. A microscopic examination of this part shows a globe-shaped protractile proboscis which is armed with six rows of hooklets which irregularly alternate. This is the same number and arrangement as we find on the Genus Echinorhynchus of the hog. There is a slight swell succeeding the head which terminates rather abruptly at the juncture of the body.



FIG. 2.—Echinorhynchus Canis. Globe shaped proboscis showing hooklets.

While these hooklets have the same shape and arrangement as the species of gigas, they are much smaller in size as may also be said of the globe and diameter of the worm. Cut No. 2 is a pen drawing of the proboscis.



These specimens were not in a condition to enable me to make a study of the internal organs in the minutest detail. Cut No. 3 shows a section of the uterus with ovoid-shaped eggs. The uterus filled the major portion of the body. The eggs were not in the process of segmentation indicating that possibly it is an oviparous parasite. Its habitat, as stated before, is the intestine of the dog. It holds on to the mucous membrane by means of its six rows of hooklets and absorbs through its integument nutrients taken in by its host and digested. It should be placed in the genus *Echinorhynchus* as it has the general characteristics of that key, and the writer suggests the special name *Canis* as it is found in the dog.

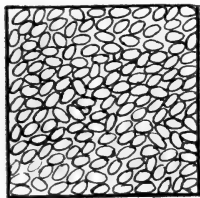


FIG. 3.—*Echinorhynchus Canis*. Section thru uterus showing ova.

## GRANULATING TUMORS OF THE SEPTUM NASI.

By HOWARD E. WINTER, D.V.S., House Surgeon at The Berns Veterinary Hospital, Brooklyn, N. Y.

On January 18th a gray cart horse about nine years old and in good general health and condition was admitted to the hospital, said to be unfit for work by reason of difficult breathing and an occasional hemorrhage from both nostrils.

Examination revealed angry looking granulating masses nearly the size of a hen's egg attached to the anterior portion of the septum nasi and almost completely filling up the entrance to both nasal chambers.

An operation was decided upon and the animal properly prepared.

On January 19th Dr. Geo. H. Berns removed about  $3\frac{1}{2}$  inches of the anterior portion of the septum, with the granulating tumors attached to each side.

The parts healed kindly and the patient was discharged from the hospital on February 18th in a fit condition for work.

*Technique.*—To guard against strangulation tracheotomy was performed while animal was still on his feet by a longitudinal incision through three tracheal rings and the introduction of a self-retaining tracheotomy tube.

He was then placed on the operating table, securely fastened, and the left side of his face thoroughly scrubbed with soap and water and disinfected with sublimate solution. Then the wing of

the left nostril was slit open from in outward about six inches, the false nostril divided in a similar manner, and the hemorrhage, which was very troublesome, gradually controlled by the usual methods.

The septum was perforated with a sharp-pointed bistoury close to the nasal bones, and by a rotary motion of the hand separated from the nasal bone above, from the upper lip in front and from the palatine bones below, and a piece about  $3\frac{1}{2}$  inches in length removed. The membranous partition forming the false nostril was removed and the slit in the wing of the nostril closed by interrupted sutures. As the hemorrhage continued, the entire nasal cavity was plugged with cotton and patient allowed to regain his feet. The tracheotomy tube and the tampons in nostrils were left in for two days after which an uneventful recovery took place, the wound in wing of nostril healing by first intention.

The section of the septum has been sent to Dr. Reid Blair for microscopic examination.

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## OPERATION FOR PUS IN THE GUTTURAL POUCHES.\*

By Dr. B. C. TAYLOR, Hillsboro, N. D.

On December 10, H. O. Brokke brought a roan gelding, eight years old, to my infirmary for treatment. He stated that when two years old this horse had distemper and had been discharging from the nose ever since, and had difficulty in breathing and in swallowing his food, which caused him to cough when eating.

The horse was in fair condition, and had been able to do some work. On making an examination, I found quite an enlargement on the right side of the neck and head. I diagnosed it, Pus in the Guttural Pouches. He was breathing quite hard, on the morning of the 11th, when I operated on him. I made an incision through the skin, and then worked with a blunt instrument and the finger through to the cavity. I found the pus in hard, oval pieces, and I had to remove them with a pair of forceps. Some of them were too large to come through the opening, so I had to crush them with the forceps. I did not have to put him on the table to operate, and worked about six hours and removed over a quart of the pus, also flushed out the cavity with water. He was breathing quite naturally, but it was very hard for him to swallow.

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\* Read at a Meeting of the North Dakota Veterinary Association.

I let him rest until the next day, and then returned to my work with the forceps. I had to work very carefully as I could feel the carotid artery with the finger and was working over the top of it; I worked about four hours and thought I had the cavity about clean, when by some means I wounded the carotid artery and a little hemorrhage started. I watched it for a few seconds and the artery let go full force; I got busy and plugged the opening, but it bled in the pus cavity and filled it so full that it shut his wind off.

I put in a tracheotomy tube which relieved that; after doing this I let him rest until the 13th, then I removed the cotton and washed out the cavity filled with clotted blood. The artery turned itself loose again, but I replugged it again, and made an incision about eight inches down the neck and ligated the carotid artery and dressed my wound, then I removed the cotton and washed out the cavity which contained the clotted blood.

On the morning of the 14th, I again cleansed the cavity and removed the tracheotomy tube, put in two sutures and dressed the wound. I gave him some shorts thinned with water so he could drink it, as it was hard for him to swallow dry grain. December 15 the horse was doing well, eating some hay and drinking gruel. I noticed that the lips on the side which the artery was tied was paralyzed, and the eye was not as bright as the other one. On December 16, horse was feeling good, and when other horses were fed, he pawed and called for his feed. I fed him some ground oats dampened a little, and he commenced to eat his grain. I went out, and on returning in twenty minutes, found him dead. His grain was nearly all eaten, and in the front of the stall and feed box was covered with blood. He had been coughing and bled through the nose.

The post-mortem revealed the rupture of an artery in the lungs.

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## CRYPTOGAMIC POISONING IN HORSES.

By R. N. MCCARROLL, D.V.S., and Dr. R. H. McMULLEN, of Dr. W. E. Howe's Force, B. A. I., Fort Collins, Colo.

The principal agricultural pursuits in the country surrounding Fort Collins, Colo., are the raising of sugar-beets and potatoes. Animals are given access to the fields, and they relish the beet-tops.

This article deals with poisoning which followed the ingestion of mouldy beet-tops, and which occurred during a period following alternately freezing and very mild weather.

Notwithstanding the fact that the horse owners of this vicinity had been given, through the medium of the newspapers, due notice of the dangers attending the feeding of mouldy beet-tops, yet numbers of animals have fallen victims as the result of the introduction of the toxic matters.

On February 27 last the attention of the writers was called to twenty-seven head of horses which had been turned out to a beet field, and which had not been "doing well."

The history of the cases was so complete that there was not the remotest chance for error in diagnosis, and as well, a careful examination of the beet-tops disclosed the mould.

One animal died previous to our arrival, and of the remainder, seventeen head (the capacity of the stable) were placed in a stable, the others being turned into a pasture separate from the beet field, and given the same feed, running water, and treatment as those which were removed to the stable.

The symptoms presented did not vary to a marked degree. All the patients exhibited asthenia, depression and dejection. The eyes were sunken and dull; the conjunctiva yellow. The pulse was weak and from 60 to 70. The temperature was  $101^{\circ}$  to  $104^{\circ}$ . All visible mucous membranes were of a yellowish cast. Breathing was somewhat labored. The urine was dark and bloody; diuresis attending several cases. There was primary constipation succeeded by slight diarrhœa. The appetite remained uniformly good throughout. A few of the more severely attacked showed a wobbly gait. No cerebral symptoms presented themselves.

On the evening of February 27 one of the animals manifested paraplegia, and slings were adopted. It died March 4. All of the others recovered.

Treatment consisted chiefly of potassium iodide for the purpose of arresting the development of the bacteria, and encouraging the elimination of the toxins. Creolin in oil was administered as an intestinal antiseptic. Sodium sulphate corrected the bowel irregularities. Where necessary sodium phosphate was resorted to as an hepatic stimulant. Liquor arsenicalis also strychn. sulph. were used in those cases in which the walk was unsteady and weakness extreme.

The lesions presented upon post-mortem were a yellowish cast of the adipose tissues, and slight congestion of the gastro-intestinal mucous membrane. The bowel contents were well digested. The liver, kidneys, and mesenteric glands were congested. The brain was normal. The membranes of the spinal cord were hyperæmic.

In all the patients a resuming of normal functions took place gradually, followed by complete recovery. They were under observation until March 13.

### FOOT-AND-MOUTH DISEASE.

Photographs taken at Lancaster, Pa., by Dr. S. G. Hendren, Veterinary Inspector B. A. I., during recent outbreak.



FIG. 1.—Foot-and-mouth disease, showing salivation.

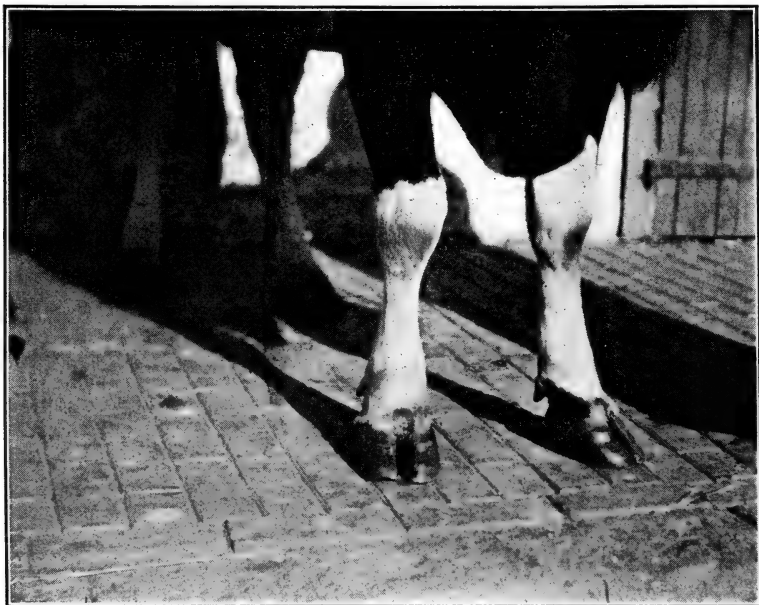


Fig. 2.—Foot-and-mouth disease, showing foot lesions.



Fig. 3.—Disinfecting stock yards.

## ARMY VETERINARY DEPARTMENT.

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### DE PROFUNDIS.

There came to my tent as the day was declining  
A cavalry vet with his head bending low.  
His sight was but dim and his scalp bare and shining,  
His footsteps uncertain, his movements were slow.  
I asked him to enter, extended a greeting.  
Then offered a seat on the edge of the bunk.  
He smiled as he mentioned our long ago meeting,  
And told me this tale while I sat on my trunk.

“Since days of my youth I have served in the Army.  
I’ve fought with the regiment—fought for the flag.  
From historic Brown to the plains round Fort Laramie,  
I’ve served long and faithful—no reason to brag.  
The war with the South made me handle a lanyard.  
O’er trails of the West I have marched in my teens.  
At San Juan de Cuba I first met the Spaniard—  
I fought him, then served in the far Philippines.”

“Old comrades, I’ve marched with from ocean to ocean,  
Have left me behind—they received their reward,  
In old age retirement, or tardy promotion.  
I’ll trust mine to God when I’m under the sward.  
As vet without rank, without hope, expectation,  
For long, drifting years I have served on small pay,  
Denied by the Congress of this powerful nation  
Whose flag I would die for too gladly to-day.”

At heart I felt grieved—I knew well the condition  
Surrounding the vet’s in our Army—still small,  
Where men without prospects soon lose their ambition.  
It flashed on my mind, They’re not soldiers at all,  
But hybrid productions of strange legislation.  
Just soldier-civilians on officer’s pay.  
He’d finished. I offered my poor consolation,  
Then grasped his cold hand ere he drifted away.

CHARLIE CHUMLEY.

## ARMY PERSONALS.

Dr. Lester E. Willyoung, 3d Field Artillery, Fort Sill, Okla., has been designated by the War Department to represent the army veterinary service at the 46th annual meeting of the American Veterinary Association at Chicago, September 7-10, 1909.

As a result of the return of the Army of Pacification from Cuba to the United States, the following changes in stations of veterinarians have been ordered: Dr. Gerald E. Griffin, 3d Field Artillery, to Fort Myer, Va., to take charge of the public animals of the Quartermaster Department at St. Asaph, Va., and the horses of Batteries D and E, Fort Myer, Va.; Dr. Fred. B. Gage, 3d Field Artillery, from Fort Myer, Va., to Fort Sam Houston, Texas; Dr. Walter R. Grützman, 15th Cavalry, to Fort Sheridan, Ill., and Dr. Herbert S. Williams, 15th Cavalry, to Fort Myer, Va.

To the Philippine Islands were ordered with their regiments: Dr. William P. Hill, 12th Cavalry; Dr. Robert J. Foster, 15th Cavalry, remaining in the states on a horse-purchasing board in Tennessee and Kentucky; Drs. Walter Fraser and Alfred L. Mason, 13th Cavalry, to Fort McKinley, near Manila, P. I., relieving Dr. C. D. McMurdo, 10th Cavalry, who returns to the United States.

Leave of one month has been granted Dr. Richard H. Power, 4th Field Artillery.

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PETRIFIED TURTLE IN STOMACH OF HORSE.—Waterbury, Ct., April 8.—From the stomach of Dina Temple, a valuable racing mare, which had to be operated upon for indigestion, was taken a perfectly petrified water turtle, four inches long and as solid as a rock. The theory is that the turtle was swallowed while the horse was drinking.—(*United Press*).

DOG WALKS HOME, HUNDREDS OF MILES.—Champaign, Ill., April 9.—Spot, a bird dog, has the whole town of Sadorus worshipping him to-day. Last February his master, William Horn, gave him to a friend, who carried him by box car to Baton Rouge, La. This morning the dog staggered into his old home with bleeding feet and a starved appearance. Henry Good, to whom the dog had been given, wrote a few weeks ago that he had disappeared. Horn says he can stay with him the rest of his dog days.—(*New York World*.)



## ABSTRACTS FROM EXCHANGES.

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### ENGLISH REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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THE RADICAL OPERATION FOR VENTRAL HERNIA [*H. Caul-ton Reekes, F.R.C.V.S.*].—The author has a special method for the relief of umbilical hernia which he will describe later. For the present, he will only say that it is a modification of the method by ligature, and he refers to it in this case because the present patient had umbilical, and also a large ventral hernia; one of the largest he had ever met with. The horse was three months old, had an umbilical hernia, and back of it, about one inch from it, on the right side, there was a fissure in the abdomen, running backwards and outwards, reaching nearly the region of the flank. Both hands stretched out and placed side by side will give an idea of its dimensions. Ligature, clamping or trussing would have been useless. Only an operation, with all its risks, could be advised. With hesitation, and after three or four weeks, the owner consented to it. The animal was well prepared by a severe diet of several days, a condition which, says the writer, is essential in all cases of abdominal surgery; at least when it is possible. The instruments were carefully prepared and aseptized. Sterilized dressings, sponges, etc., were on hand. The animal was thrown with side lines as in castration. The field of operation shaved and disinfected, the cutaneous hernial sac only was then opened by one incision from end to end along its median line. Hemorrhage was arrested. The peritoneum was opened with a blunt-pointed pair of scissors. The exposed intestines were covered with cloths which had been dipped in a saline solution and wrung out, and while one hand pressed the intestines down over the cloth, with the other hand the cloth was pushed in the abdomen between the walls and its contents. The back end of the cloth only was allowed to lie outside of the body. The suturing was then carried out with stout carbolized silk, including on each side a full inch of the ring, so that when pulled tight the sutures should cause the peritoneal surfaces to

come in close apposition. Beginning at the anterior end of the ring the sutures were inserted, but not pulled and tied, until all the stitches were made. The cloth which had protected the intestines was pulled out only when there remained three or four stitches to secure. Once the ring thoroughly sewn up, the closing of the cutaneous incision was completed by adjusting the edges, applying stout pin sutures tied in a figure 8 manner and a dressing of powdered boric acid. The umbilical hernia was then reduced. The animal made a good recovery without any event worth noticing, except one day where a little fear of possible peritonitis was entertained, which was, however, readily controlled.—(*Journ. of Comp. Pathol. and Therap.*)

CHRONIC ENDOCARDITIS WITH THROMBOSIS IN A MARE [*W. Graham Gillam, M.R.C.V.S.*].—This seven-year-old mare has had a mild attack of strangles. Some time after she had several attacks of colic. Of late, although in excellent condition, her pulse is weak and her mucous membranes indicate anæmia. Two months later she materially has lost flesh, pulse is very feeble and intermittent. No definite heart sound can be distinguished at auscultation. The visible mucous membranes are very pale, she moves her hind legs in a wooden manner. Although she takes tonics and stimulants all the time, her condition gets worse. She has dropsical swellings under the chest and abdomen. The stiffness of her hind legs is more marked. The extremities are cold. Rectal examination reveals the absence of pulsations in the right iliac and very little in the left. The mare is killed. The circulatory apparatus shows lots of lesions. Heart enlarged with the muscular tissue having a boiled aspect. Endocardium is covered with verrucose growths, cauliflowerlike, individual growths varying in size from that of a pea to that of a large walnut. Some are pedunculated. The valves are most affected. There is an aneurism of the size of a duck's egg on the posterior aorta, one inch from the great mesenteric artery. The mesenteric, renal, right and left iliac arteries are more or less plugged with thrombosi. The other organs of the abdominal cavity were generally in good condition.—(*Ibidem.*)

ANESTHESIA WITH A BOAR [*H. Taylor, F.R.C.V.S.*].—A six or eight-months-old Berkshire boar has become ugly and on three occasions had gone for his attendant. To "ring" him was not an easy job and chloroform was necessary. Thrown with some little difficulty, he received with a Carlisle muzzle half

an ounce of chloroform and then another half an ounce later. In ten minutes he was apparently well under the influence and the operation was begun; but as he squealed again when the snout was pierced preparatory to the insertion of the steel ring, and as he was about coming out of the anesthesia before the rings were secured, two other half ounces were given, a few minutes apart, and when the boar was well under it, the operation was concluded. He quickly got over the effects of the chloroform.—(*Veter. Record.*)

STRANGLES WITH SECONDARY ABSCESS FORMATION IN THE LATERAL VENTRICLES [*P. R. A. Thrale*].—A bay gelding of four years has strangles. The submaxillary and parotid regions are affected. There are abscesses rather slow to come to a point and they are blistered. After three weeks of treatment the animal seems to be on the road to recovery when one morning he shows complications. The horse is down in a semi-comatose condition, with a temperature of 106° F. Pulse is quick and feeble. Respiration hurried. Mucous membranes are injected. He was gotten up on his feet; but in the evening his temperature has dropped to 99° F. Stimulants were prescribed, but death took place after a short time. At the post-mortem the lungs were found emphysematous. The right ventricle of the heart was slightly dilated. On examination of the brain it was found that the right lateral ventricle was the seat of an abscess which contained thick foetid pus.—(*Veter. Record.*)

ŒSOPHAGOTOMY—RECOVERY [*J. N. Marshall, D.Sc.*].—An aged pony was choking. Manipulation of the œsophagus revealed the presence of a foreign body about the middle of the cervical region, but, peculiarly, it was more prominent on the right side of the neck. Oil and external taxis are negative in displacing it. No suitable probang is at hand. But as the case is critical, œsophagotomy is resorted to at once. After aseptic measures were taken, best as they could be, an incision is made directly opposite the foreign body, the œsophagus is open, and a piece of mangold extracted. The mucous membrane was left without being sutured, the muscular coat was closed with interrupted sutures of silkworm gut, the skin with eight stitches of the same material. Healing by first intention took place. The diet consisted of liquid food for five days and then slops until deglutition was normal. Twelve days after the operation the horse was able to work.—(*Veter. Record.*)

ENDOMETRITIS IN THE BITCH TREATED WITH OZONE [*Guy Sutton, M.R.C.V.S.*].—Aged seven years and as far as is known having never been served, this Scotch terrier bitch presents all the general and local symptoms of endometritis, discharge from the vulva, tenderness of the abdomen on pressure, uterine horn thickened, temperature varying between  $101.4^{\circ}$  F. and  $103^{\circ}$  F., etc., etc. All kinds of astringents and disinfecting solutions with general tonics have failed and ozone treatment resorted to. The ozone was prepared from pure oxygen, the ozonizer being excited by an electric current of one ampere, pulled through a Rhumkoff coil. A flexible tube terminating in a glass vaginal nozzle was attached to the ozonizer and through this the ozone was injected directly into the horn. Each application lasted from fifteen to twenty minutes. In three weeks fourteen applications were made and the bitch completely recovered. Three months later the discharge had not returned.—(*Veter. Journ.*)

ANTISTREPTOCOCCI SERUM IN THE TREATMENT OF STRANGLES [*J. F. Craig, M.R.C.V.S.*].—An aged gray mare had received a wound on the jaw. She was then in company with a three-year-old filly that had strangles. The wound of the old mare became complicated with abscesses. From that time she had them on the cheek, in the intermaxillary space and on the parotid. These were treated. Others came near the lips. Streptococci were found in the pus. 100 c.c. of strangles serum "Hoechst" were injected subcutaneously. Decided improvement followed and all the abscesses healed more or less rapidly. Some few days later new abscesses formed in the parotid; then another in front of the junction of the left submaxillary and jugular veins and so on until all passed away and the animal finally recovered, the affection having lasted from the beginning of September to that of November. Some improvements had followed the injection of serum, but did not entirely prevent the formation of other abscesses, although a period of forty-nine days elapsed between the injection of serum and the pointing of the abscesses.—(*Veter. Journ.*)

DISLOCATION OF THE EYEBALL IN A DOG [*By the same*].—While playing with a large collie dog, a Pomeranian little fellow, got a blow on the left eye which was pulled out of its socket. It protrudes in front of the eyelids and the conjunctiva is swollen and congested. The cornea is dim. Treatment: Cocaine to produce local anesthesia. Lukewarm water solution of boracic

acid to clean the eye and conjunctiva; a little castor oil to lubricate, small incision on the outside canthi to enlarge the palpebral fissure, return of the eye in position, silver wire suture of the incision, bandage over the eye to protect it and collyriums of boracic acid and belladonna in water, applied twice a day. Complete recovery.—(*Ibidem.*)

SPINAL FRACTURE WITHOUT DISPLACEMENT [*E. A. Ryan, M.R.C.V.S.*].—Big, lumbering, sixteen hands high, untrained, half-bred gelding, aged three years old, has to be fired. He is very wild. He has to be cast, although having a rather roach back, inspires some fear. However, he is thrown, drops easily, but struggles considerably during the whole operation. When this is finished, he gets up without any trouble. He is taken to a field where, turned loose, he gallops and runs with the other horses. Seen a few hours after, he is still galloping round the field. The next morning he is reported as being stiff. Yet he moves quite well when going in straight line, but when turning round he has lost power of co-ordination behind. He is placed in a smaller field where he will be kept quieter. The next day he is down and unable to get up. Rectum and bladder are paralyzed. His hind limbs do not respond to the pricks of a pin. Rectal examination negative. He is destroyed. Clot of blood is found on each side of the spinal column. The psoas muscles are torn from their insertion. The body of the last dorsal vertebrae is fractured but there is no displacement. In the spinal canal there is a clot of blood pressing upon the spinal cord.—(*Veter. Journ.*)

UMBILICAL HERNIA IN A NEW-BORN CALF WITH RUPTURE OF THE SKIN—COVERING THE HERNIA [*E. A. Ryan, M.R.C.V.S.*].—This calf was delivered by the owner of the cow and when seen by the writer was lying on the bare floor with all the small intestines out, there being an umbilical hernia with the skin ruptured over it for about three inches in length. Although considered a hopeless case, the owner wishes it treated. The bowels were washed in warm solution as well as possible and returned in the abdomen. The peritoneum was picked up, twisted, and a piece of silk tied round and as close up as it could be. What remained below the skin was cut off. The wound was closed with continuous sutures, including skin and muscles. The next morning the calf was comfortable and looking for his food. In a week he was quite well. Lysol and boracic acid were used to dress the wound.—(*Ibidem.*)

HERNIA OF THE OMASUM [*James Chalmers*].—After some days of illness this animal died and the post-mortem revealed a rupture of the diaphragm in the middle and the omasum in the thoracic cavity. It was attached to the posterior lobe of the right lung which was pneumonic and gangrenous. After cutting the adhesions a piece of wire was found protruding and the contents of the omasum were also found, consisting of two buttons, one small staple, one screw nail, five wire nails, half of a lead washer, two sharp French nails, two small sharp pieces of thin metal and many pieces of bones. This rupture was evidently of old standing.—(*Veter. News.*)

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## FRENCH REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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OCCCLUSION AND PERFORATION OF THE INTESTINE IN A DOG [*Henry Broc*].—Three-months-old dog, ordinarily very lively, has suddenly become dull and quiet, refusing his food and throwing up all that he is made to take by force. Is it the incubation of distemper? Placed in observation, he dies during the night. At the post-mortem the abdomen is found full with a yellow exudate containing numerous blackish small pieces of coal. The intestinal circumvolutions are tympanitic and rather congested. Towards the termination of the small intestine there is a transval laceration with necrotic irregular borders. In the intestines and in the stomach there were found balls made of rags and also pieces of straw and hairs. The colon contained pieces of coal also. All the other organs were healthy. Septic peritonitis, due to intestinal perforation, was the cause of death.—(*Journ. de Zootech.*)

ACUTE ROARING CURED BY TRACTIONS UPON THE TONGUE [*Mr. Nain, Army Veterinarian*].—A mare, aged sixteen, is suddenly taken with short and loud breathing, which is heard several meters away. The nostrils are much dilated, the flanks are hurried; heart beatings are fast. The roaring comes from the throat and only during inspiration. Now and then the animal has spells of coughing, after which she is a little relieved. The throat is

very painful and exploration of the mouth quite difficult as the animal fights against it. The tongue is pale and as it is pulled out of the mouth the roaring diminishes. As soon as it is allowed to go back in the mouth the noise returns. Several tractions were then repeatedly applied and after a while all fears of danger had subsided. There had been an œdema of the glottis which by the tractions upon the tongue had easily been resorbed. This method of treatment is to be tried before tracheotomy is resorted to.—(*Rec. d'hyg et medec. veter. militaire and Journ. de Zootech.*)

TUBERCULOSIS IN A PANTHER [*Bergeon, Sanitary Insp.*].—This female animal has been in captivity for sixteen years and has lost flesh considerably. Her appetite is capricious. Her coat is staring, the glances of the eyes are dull, the flank retracted, respiration seemed labored and she has frequent spells of coughing. Finally she died and here is the result of the autopsy: Great emaciation. Liver has a characteristic color of dead leaf, the hepatic tissue is hard and sclerosed here and there. The pleura are thick and in places attached to the lungs and to the thoracic walls, there is abundant pleuritic effusion. The lungs show lesions of pneumonia and in the right one, yellowish granulations of various sizes. In the parenchyma of the organ, similar ones are found, containing caseo-cretaceous substance. The left lung has a large cavern containing yellow thick pus and forming a typical lesion. The bronchial and mediastinal glands are hypertrophied. The bacilli of Koch were found at the microscopical examination of the lesions and in the pathological products. Innoculations and cultures confirmed the diagnosis—(*Rev. Veterin.*)

FREQUENCY OF TUBERCULOSIS AMONG BUFFALOS AND THE ACTION OF TUBERCULIN [*Dr. Kutchukoff, Sofia*].—Buffalos are of importance in the economical life of Balkans countries, in Turkey and other Asiatic places, where they are used for hard work in towns and in the country to plow. The milk of the females, the cream and the butter are used extensively. Tuberculosis is rather frequent among buffalos used in towns and also in milch animals. At the abattoir of Sofia the disease is found more frequently in males than in females. Tuberculosis is rare in milch buffalos, even with those that have been for a long time in barns with tuberculous cows. In one late occasion the author tested with tuberculin twenty milch buffalos and twenty-four cows which were in the same barn. Forty per cent. of the cows reacted and only one among the buffalos. The action of tuber-

culin in buffalos is very marked. The temperature rises to  $41.2^{\circ}$  C. The animal eats very little, remains lying down with the head bent under him. The respiration is accelerated. Chills are frequent. Pulmonary lesions are found at post-mortem.—(*Rev. Génér. de Médec. Vétér.*)

OBSTETRICAL PARALYSIS OF THE ANTERIOR TIBIAL MUSCLES IN A NEW BORN CALF [*Mr. Bedel*].—A two-days-old calf has great difficulty to move. To extract him from his mother it required a great deal of pulling. He stands normally, but when made to walk he carries his hind legs well forward, and as they come to the rest on the ground the fetlock bends suddenly and by a sudden jerk the angle of the hock is closed. The anterior face of the tibial region looks convex and the apex of the os calcis touches the tibia. This motion is of short duration and the animal resumes its normal standing. These manifestations were observed in both legs. A diagnosis was made of paresis of the flexor metatarsi muscle and also of the extensor of the phalanges, due to the overstretching of the nerves of the region. No treatment was ordered. The symptoms subsided gradually and recovery was complete in two weeks. The author records another case which presented symptoms somewhat similar and which recovered in eight days.—(*Prog. Veter.*)

CONGENITAL FEMORO-TIBIAL SYNOVIAL ENLARGEMENT IN A COLT [*By the same*].—Two days old, this colt is quite lame on the left hind leg. He has a dilatation of the femoro-tibial synovial, which had been observed at birth. A severe blister is applied; but without result. After some little time fine needle cauterization was resorted to and a fine conical iron, heated white, was thrust in the lower part of the swelling, making a deep puncture, through which all the synovia escaped. When the swelling had almost entirely subsided, and the flow of synovia had about stopped, a stiff blister was applied. After a few weeks the little fellow was entirely well. The case was recorded because such an accident is rare in the new-born animal, and again on account of the fact that it is in general rebellious to all kinds of treatment.—(*Ibidem.*)

OLD AND REBELLIOUS SINUSITIS TREATED WITH SUCCESSFULLY CONTINUED IRRIGATIONS [*M.M. Fayet and Moreau, Army Veterins.*].—This mare has had a bad abundant discharge from the right nostril, for which she has been treated for a year. She has been malleined with negative results. At times the run-



ning has subsided and the animal seemed to have recovered. But after a short time the trouble returned. Trephined on the inferior maxillary and frontal sinuses, these cavities are cleaned of a quantity of foetid pus. An opening is made between the sinuses and injections of permanganate of potash prescribed. But as after a few days the communication is closed between the sinuses these are filling up again and a drain has to be introduced and left in place so as to allow constant washing of the two cavities. The drainage was established in such a manner that the flow of water was continuous and the pus washed out as quick as it was formed. The running of the water was kept up all day for two days and as an improvement was manifest, it was used only every two hours for fifteen or twenty minutes. After eighteen days of treatment, the animal was entirely well and has been ever since.—(*Le Répertoire.*)

FOUR OPERATIONS OF BOCCAR IN A MONTH [*M. David, Army Veter.*].—The operation of BOCCAR is the tenotomy of the lateral extensor of the phalanges for the relief of springhalt. Patronized by some, it has with others given imperfect and unsatisfactory results. The author gives the account of four cases which were operated by him and were accompanied by recoveries. In one mare the improvement took place only slightly, immediately after operation, but was entirely cured in six days. A horse remained on treatment only one week. Another mare only fifteen days. A thoroughbred took somewhat longer. In none of them did the springhalt subside immediately; but gradually passed off, to disappear after a lapse of time varying between fifteen days and three weeks. The operation is very simple and scarcely imposes any loss of work, cicatrization occurring always in a few days.—(*Rev. Gener. de Medec. Veter.*)

UNILATERAL GLUTEAL ATROPHY, PROBABLY DUE TO EMBOISM [*M. L. Magnin, Army Veter.*].—Twelve-year-old horse is suffering with incomplete paralysis of the anus, rectum and tail. The bladder functionates normally. While in camp, this infirmity is not a very great inconvenience, but when in march or in manœuvres the rectal paresia is increased, the feces collect in the last portion of the digestive canal, the horse has colic, which often is immediately relieved by the unpleasant back raking. The disease with this horse is of long standing and seems to be the result of a fall which was accompanied with fracture of the sacrum. One day the horse was taken with serious thrombo-

embolic colic, and after recovery, in about one week he had lost considerable flesh. Some two weeks after this a very marked atrophy of the gluteal region of the left side took place and so rapidly increased that the horse was ultimately sold almost for nothing. The author believes that this atrophy was due to arterial embolism.—(*Rev. Gener. de Med. Veter.*)

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## GERMAN REVIEW.

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By J. P. O'LEARY, V.M.D., Bureau of Animal Industry, Buffalo, N. Y.

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RECENT STUDIES CONCERNING ETHER AND CHLOROFORM [*M. Nicloux*].—The author recently made known to the Paris Academy of Sciences through an extensive treatise, a number of details hitherto unknown, also the results of minute investigations and studies concerning the history and mechanism of anaesthesia by means of ether and chloroform in animals. He summarizes as follows: When insensibility is produced by ether, larger quantities of it are found in the circulating blood than in the case of chloroform narcosis. Relative experiments were undertaken with animals of the same species, and as usual with dogs. In determining the quantities of both agents in the blood it was estimated at the beginning of narcosis, at its height and shortly before death. The ether was much more rapidly eliminated than the chloroform. Although chloroform appears in the urine as chloride a decomposition in the blood during narcosis does not take place. The ether is distributed equally throughout the blood plasma and the blood corpuscles, whilst chloroform has, on the contrary, a powerful affinity for the latter, the blood corpuscles containing seven to eight times more than the plasma. In etherization the ether is equally distributed throughout the brain, as well as in the medulla oblongata. In chloroform narcosis the medulla on the contrary contains a larger quantity of chloroform than the brain.—(*Deutsche Tier Wochenschrift*, No. 29, 1908.)

ARTICULAR WOUNDS [*District Vet. M. Notz, Freising*].—The author describes the methods which he employs in the treatment of joint wounds, such as enlarging the orifice of the wound; thorough cleansing and disinfection of same with the usual dis-

infecting remedies; the removal of necrotic tissue. Notz recommends in particular sodium bicarbonate as a dusting powder on the wound. He applies a mixture of 100 parts of sodium bicarbonate and 1 part of sodoform with good results. He further explains the action of the sodium salt as follows: This agent when in contact with the wound secretions gradually dissolves. It exercises a destructive influence on the pyogenic organisms (probably through solution). It also prevents the destruction of tissue. Consequently the closure of the wound is brought about more readily. Notz relates the history of a horse suffering from a severe joint wound which he had cured with sodium bicarbonate.—(*Deutsche Tier Wochenschrift*, No. 29, 1908.)

CONCERNING MODERN LOCAL ANAESTHESIA, WITH SPECIAL REFERENCE TO ANAESTHESIN AND NOVOCAIN-SUPRURENIN [*Chief Vet. Dr. Goldbeck, Schwedt*].—The author discusses the merits of the preparations of cocaine and the orthoform groups. Anaesthesin belongs to the latter group. In cases of hyperaesthesia, anaesthesin is an excellent remedy. In a case of extreme sensibility of the auditory apparatus, in otitis externa in a dog, Goldbeck applied the following solution: Anaesthesin 3.0 grms. Spt. Rect. and Ag. Destillata aa 50.0 grams. A small quantity was poured into the ear twice daily. To allay irritation anaesthesin may be prescribed with benefit in conjunction with Pulv. Salicylici cum Talco, 1 to 10 parts, or in the same proportion with Pasta Salicylica Lassar. Stovin, Alypin, and Novakain belong to the cocaine group. These preparations are preferable to cocaine, because they are less poisonous. Novakain is highly esteemed as its action is not impaired when combined with suprarenin. Braun and Bier have established the fact that the vasoconstrictor suprarenin increases the action of the local anaesthetics and is not rendered inert by them. Unfortunately the Novo-Suprarenin solution is not permanent. Goldbeck employs a 0.5 per cent. solution of Novokain-Suprarenin for diagnostic purposes, infiltration of the nerves. As a local anaesthetic in the region of operations he uses the following: Novokain 0.25, Physiological salt solution 100.0, and 5 drops of a 1 to 1,000 Suprarenin solution. In other cases Novokain can be applied in the proportion 1 to 50 and even 1½ to 40. This solution may be painted on the wound or injected. The effect lasts at least half an hour. Novokain is not as poisonous as cocaine, neither does it produce symptoms of excitement, nor has any ill effects been observed at the seat of operation which might retard healing of the wound.—(*Deutsche Tierarzt, Wochenschrift*, 1907, No. 21.)

CONCERNING CELL POISONS AND CELL DISEASES [*Prof. Zschokke, Zürich*].—Scientists to-day are investigating the elementary processes of life in the unicellular being. Zschokke, in his paper read before the Vet. Association, discussed the question of the nucleus (the seat and termination of life), the protoplasm (the workshop of the nucleus), and the cell membrane. He then referred to cell poisons, especially cell changes, changes in form, structure and chemical reaction, changes of function, changes of the protoplasm resulting in cellular diseases (cloudy swelling, hyaline, mucous, hydropic degenerations). The death of the nucleus (disintegration, dissolution). By means of staining and reagents it is possible to identify cellular diseases, particularly the functional disturbances which serve ample proof as to cellular diseases. These functional disturbances consist of a diminution (enervation) or an increase (stimulation), or in a qualitative change in the cell activity. A lowering of the cell function is observed most strikingly in freshly infected feverish animals, in view of which numerous glands perform their functions imperfectly or not at all. For instance, the mammary glands dry up completely, the muzzle becomes dry, the mechanical power of the muscles is decreased—cardiac weakness. The increased activity of the cell is due partly through direct influence on the cell body by toxins, partly indirect by nervous irritability. For example, the enormous secretion of the intestinal glands in cholera and the night sweats of the tubercular. Most striking is the increased function of the nervous elements (pain, photophobia, pruritis). One of the most important functional factors is the promotion of assimilation, the growth and multiplication of cells (local cell proliferation in tuberculosis, glanders and so on in the proximity of the nodules). The qualitative changed cellular activity is prominently set forth, in the formation of anti-bodies. This brief sketch shows, as Virchow taught, that disease and curative processes depend finally on the body cells.—(*Osterr. Monatsschrift für Tierriekunde, S. I., 1908.*)

THE TRANSPORTATION OF LIVING SEA FISH.—At the Cuxhaven fishery successful experiments were conducted in order to make possible the transportation of living sea fish to the large cities of the interior. The experiments were undertaken with the co-operation of the fisheries inspectors and the fish transporting firms, Kauman Nachfl. A. G. Berlin. Specially constructed wagons were employed for the purpose. Already loads of living fish (fresh water fish) were shipped from Roumania and Mar-

sailles to Berlin. The time occupied in transportation being from 90 to 100 hours. The fish arrived in excellent condition. After several tests, live fish such as plaice, turbit and sole were placed in a wagon filled with salt water, which contained  $3\frac{1}{2}$  per cent. salt. After a journey occupying 36 hours the loss entailed was a few per cent. of plaice. The larger portion of the plaice and all the other fish arrived in a perfectly healthy condition. The success of this experiment is of great importance to the German sea fishery.—(*Berliner Tier Wochenschrift*, No 32, 1908.)

COLIC [*Chief Vet. Heiman*].—In the case of a horse which had died showing symptoms of colic, Heiman found on post-mortem that peritonitis was the cause of death, produced by ascarides. At the end of the deiodenum a large nodular mass about the size of a man's fist could be felt. This was found to be a mass of ascarides and aliment. From this dilated portion of intestine small round holes lead to a cavity of about 9 c.m. in diameter, the latter being enclosed in the mesenteric folds. The pocket-striped cavity was filled with ascarides, pus and intestinal contents. At one point the wall of the pocket was rent.—(*Zeitschrift fur Veterkunde*, S., 321, 1908.)

VETERINARY PROGRESS IN THE PHILIPPINES.—It is interesting to know that there exists in the Philippine Islands a well organized Veterinary Medical Association, made up of American veterinarians who are in that part of the world in different branches of our government service. The greater number are in the Bureau of Agriculture, some are in the Army, some in the Quartermaster's Department, one is in the employ of the city of Manila, and still another in private practice, making thirty-six veterinarians in all. The association has been organized four years, and meets yearly in a five days' session. The last meeting was held during the presence of the fleet in Manila. The present officers of the association are: President, F. C. Gearhart, D.V.M. (Acting Chief Veterinarian, Bureau of Agriculture); Vice-President, L. M. Pick, D.V.M. (Veterinarian, 9th Cavalry); Vice-President, C. M. Richards, V. S. (practitioner); Secretary, Chas. G. Thomson, D.V.M. (in charge serum laboratory, Bureau of Agriculture).

## CORRESPONDENCE.

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### NINTH INTERNATIONAL VETERINARY CONGRESS —LATEST GENERAL INDICATIONS.

#### SUBJECTS TO BE TREATED AND REPORTERS.

##### A. GENERAL MEETINGS.

1. *Governmental efforts against swine-plague and hogcholera (swine-fever) based upon the recent researches regarding their etiology, vaccination, serovaccination, etc.*

Reporters—M. Dorset, M.D., Bureau of Animal Industry at Washington (United States of North America); Dr. F. Hutyra, Hofrat, rector and professor of the Superior Veterinary School at Budapest (Hungary); Dr. R. Ostertag, Geheimer Regierungsrat, director in the Reichsgesundheitsamt at Berlin (Germany); S. Stockman, principal veterinary surgeon at London (England).

2. *The protection of the practice of veterinary medicine.*

Reporters—P. Cagny, veterinary surgeon at Senlis (Oise, France); W. Hunting, at Chelsea, London (England); W. Kotlár, chief district veterinary surgeon at Melnik (Bohemia); M. Preusse, Veterinärarrat, departmental veterinary surgeon at Dantzig (Germany).

3. *The rôle of the veterinary surgeon as expert in zootechnical questions.*

Reporters—Gustav Elsner, district veterinary surgeon at Podersam (Bohemia); C. Matthiesen, Veterinärarrat, departmental veterinary surgeon at Hanover (Germany); Lavalard, veterinary surgeon, President of the Central Society of Veterinary Medicine at Paris (France); P. P. van der Poel, government veterinary surgeon at Bandoeng, Java (Netherlands East Indies).

4. *The conditions necessary to obtain the doctorate in veterinary science.*

Reporters—Dr. F. Hutyra, Hofrat, professor and rector of the Superior Veterinary School at Budapest (Hungary); E.

Leclainche, professor of the National Veterinary School at Toulouse (France); Dr. R. Schmaltz, professor and rector of the Superior Veterinary School at Berlin (Germany).

5. *The sanitary control of milk and the obligatory systematic inspection of meat.*

Reporters—Dr. R. Edelmann, Obermedizinalrat, professor of the Superior Veterinary School at Dresden (Germany); Dr. C. Happich, professor of the Veterinary Institute at Dorpat (Russia); Dr. H. Martel, chief of the veterinary sanitary service at Paris (France); Dr. A. D. Melvin, chief of the Bureau of Animal Industry at Washington (United States of North America); Porcher, professor of the National Veterinary School at Lyon (France); Dr. H. Rievel, professor of the Superior Veterinary School at Hanover (Germany); A. M. Trotter, Morestreet abattoir at Glasgow (England).

6. *The methods employed in treating the carcasses and meat, with the object of rendering them harmless*

Reporters—Dr. A. D. Melvin, chief of the Bureau of Animal Industry at Washington (United States of North America); Dr. A. Moreau, retired sanitary veterinary surgeon at Paris (France); F. von Puntigam, municipal veterinary inspector at Brünn (Moravia); Dr. Zwick, Regierungsrat and professor in the Reichsgesundheitsamt at Berlin (Germany).

7. *The prophylaxis and pathology of protozoan diseases (piroplasmoses, trypanosomoses) with demonstration of the specific parasites and of the transmitting animals (ticks, mosquitoes, etc., etc.).*

Reporters—E. Dschunkowsky and J. Luhs, station for the inoculations against cattle plague at Surnabad (Transcaucasia, Russia); Dr. P. Knuth, professor of the Superior Veterinary School at Berlin (Germany); J. Lignières, professor, director of the Bacteriological Institute at Buenos Ayres (Argentina); E. Marotel, chief assistant of parasitology of the National Veterinary School at Lyon (France); C. S. Motas, professor of the Superior Veterinary School at Bucharest (Roumania); C. A. Penning, inspector of the civil veterinary service of the Netherlands East Indies at Buitenzorg (Java); Piot-Bey, director of the veterinary service of the administration of the domains of Egypt at Cairo (Egypt); Dr. A. Theiler, government veterinary bacteriologist at Pretoria (Transvaal).

8. *The governmental control of sera and bacterial products and their preparation by government.*

Reporters—Dr. Berghaus, director in the institute of experimental therapy at Frankfort-on-Main (Germany); E. Leclainche, professor of the National Veterinary School at Toulouse (France); Dr. G. Leurink, professor of the Veterinary School at Buitenzorg (Netherlands East Indies); Dr. H. E. Reeser, bacteriologist of the sero-therapeutical institute of the state at Rotterdam (Netherlands); Dr. Joseph Schnürer, professor of the Superior Veterinary School at Vienna (Austria); Dr. C. Titze, Regierungsrat in the Reichsgesundheitsamt at Berlin (Germany).

9. *Avian tuberculosis in its relations to tuberculosis in mammalia.*

Reporters—Dr. S. Arloing, professor of the University, director of the National Veterinary School at Lyon (France); Oluf Bang, veterinary surgeon, assistant of the Superior Veterinary School at Copenhagen (Denmark); J. Mohler, V.M.D., Bureau of Animal Industry at Washington (United States of North America); Mrs. Dr. Lydia Rabinowitsch, at Berlin (Germany).

10. *The sterility of cows and its dependence upon the infectious diseases of the genital organs.*

Reporters—Albrechtsen, veterinary surgeon at Aakirkeby (Denmark); C. Cuny, chief assistant of bovine pathology of the National Veterinary School at Lyon (France); Dr. E. Hess, professor of the University at Berne (Switzerland).

11. *Governmental efforts against tuberculosis, with regard to the ways of infection in this disease.*

Reporters—Dr. B. Bang, professor of the Superior Veterinary School at Copenhagen (Denmark); U. Dewar, professor of the Royal Veterinary College at Edinburgh (Scotland); G. Moussu, professor of the National Veterinary School at Alfort (France); Dr. R. Ostertag, Geheimer Regierungsrat, professor, director in the Reichsgesundheitsamt at Berlin (Germany); Dr. J. Poels, director of the sero-therapeutical institute of the state at Rotterdam (Netherlands).



12. *Construction and interior of stables in relation to the prophylaxis of diseases of animals, especially tuberculosis, and also to the hygiene of milk.*

Reporters—Dr. Dammann, Geheimer Regierungs- und Medizinalrat, director of the Superior Veterinary School at Hanover (Germany); H. M. Kroon, professor of the State Veterinary School at Utrecht (Netherlands); J. S. Lloyd, chief veterinary inspector, president of the association of veterinary officers of health at Sheffield (England); J. Monsarrat, chief departmental veterinary surgeon, member of the departmental board of hygiene at Lille (France), and L. Revière, sanitary veterinary surgeon, member of the second sanitary committee of the district at Lille (France).

#### B. MEETINGS OF THE SECTIONS.

##### I. First Section.

1. *Inspection of fish, game, poultry, crustaceous animals and molluscs, and of other animal foods, not included in the question 5 of the general meetings, in relation to the hygiene of man.*

Reporters—K. Borchmann, chief of laboratory in the hygienic institute of the Superior Veterinary School at Berlin (Germany); E. Césari, sanitary veterinary surgeon at Paris (France); Oskar Oppenheim, municipal veterinary surgeon at Lundenburg (Austria); a reporter to be named by Dr. A. D. Melvin, chief of the Bureau of Animal Industry at Washington (United States of North America).

2. *Insurance of stock in relation to obligatory meat inspection.*

Reporters—Dr. R. Edelmann, Obermedizinalrat, professor of the Superior Veterinary School at Dresden (Germany); A. Pirocchi, professor of the Royal School of Agriculture at Milan (Italy); Karl Pitha, chief veterinary surgeon of the Moravian insurance of cattle at Brünn (Moravia); F. Hendrickx, professor of the State Veterinary School at Cureghem-Brussels (Belgium).

3. *Disinfection of the vehicles of transport and animal products in international traffic.*

Reporters—A. Conte, departmental veterinary surgeon at Montpellier (Hérault, France); Max Führer, veterinary inspec-

tor, president of the veterinary association at Vienna (Austria); Dr. A. A. Overbeek, district veterinary surgeon at Groningen (Netherlands).

4. *Serotherapy, seroprophylaxis and vaccination of foot-and-mouth disease and their value from the point of view of legal sanitary police.*

Reporters—E. Leclainche, professor of the National Veterinary School at Toulouse (France); Dr. F. Löffler, Geheimer Medizinalrat, professor of the University at Gripswald (Germany); Dr. Lourens, under-director of the sero-therapeutical institute of the state at Rotterdam (Netherlands); Dr. E. Peroncito, professor of the University and of the Superior Veterinary School at Turin (Italy); H. Vallée, professor of the National Veterinary School at Alfort (France).

## II. Second Section.

1. *The diagnosis of infectious diseases by means of the recently discovered reactions of immunity (except the subcutaneous injection of tuberculin and mallein).*

Reporters—Dr. L. de Blicck, director of the bacteriological laboratory at Buitenzorg, Java (Netherlands East Indies); J. Lignières, professor, director of the bacteriological institute at Buenos Ayres (Argentine); L. Panisset, professor of the National Veterinary School at Lyon (France); Dr. J. Schnürer, professor of the Superior Veterinary School at Vienna (Austria); A. Wladimiroff, professor, member of the Imperial institute of experimental medicine at St. Petersburg (Russia).

N. B.—Dr. Schütz, Geheimer Regierungsrat, professor of the Superior Veterinary School at Berlin, will present a report, prepared by one of his disciples.

2. *Etiology and pathogeny of malignant tumors, especially of cancer.*

Reporters—Apolant, professor, member of the institute of experimental therapy at Frankfort-on-Main (Germany); Dr. Bashford, director of the laboratory of the Imperial Cancer Research Fund at London (England); Dr. Borrel, chief of laboratory at the Pasteur Institute, Paris (France); Dr. A. Jaeger, veterinary surgeon at Frankfort-on-Main (Germany); C. O. Jensen, professor of the Superior Veterinary School at Copenhagen (Denmark); Dr. von Wasielewsky, extraordinary professor, chief physician and director of the laboratory of parasitology of the institute for the study of cancer at Heidelberg (Germany).

### 3. *Vaccination against tuberculosis.*

Reporters—Dr. A. Eber, professor of the University at Leipzig (Germany); Dr. T. Heymans, professor of the University of Ghent (Belgium); Dr. M. Klimmer, professor of the Superior Veterinary School at Dresden (Germany); H. Vallée, professor of the National Veterinary School at Alfort (France).

N. B.—Dr. Schütz, Geheimer Regierungsrat, professor of the Superior Veterinary School at Berlin, will present a report, prepared by one of his disciples.

### 4. *Anatomo- and histo-pathological diagnosis of rabies.*

Reporters—Dr. L. Frothingham, professor of the Harvard Medical School at Boston (United States of North America); Dr. van Gehuchten, professor of the University at Louvain, and Dr. C. Nélis, at Bruges (Belgium); Dr. Rudolf Hartl, extraordinary professor of the Superior Veterinary School at Vienna (Austria); Dr. St. von Rätz, professor of the Superior Veterinary School at Budapest (Hungary); M. Grabowski, professor of the Superior Veterinary School at Lemberg (Austria).

N. B.—If the proceedings of the section allow it a communication will be done by Mr. Koneff, professor of the Veterinary Institute of Kharkoff (Russia), on "Experiments of Vaccination Against Glanders."

## III. Third Section.

### 1. *Specific chronic enteritis of cattle.*

Reporters—Dr. B. Bang, professor of the Superior Veterinary School at Copenhagen (Denmark); J. Bongert, director of the bacteriological laboratory of the municipal abattoir at Berlin (Germany); Liénaux, professor, and van den Eeckhout, assistant of the State Veterinary School at Cureghem-Brussels (Belgium); Dr. H. Markus, professor of the State Veterinary School at Utrecht (Netherlands); Dr. Miessner, director of the laboratory of veterinary hygiene at Bromberg (Germany); Dr. W. Stuurman, director of the municipal abattoir of Alkmaar (Netherlands).

### 2. *Infectious pleuro-pneumonia of horses.*

Reporters—C. Cadéac, professor of the National Veterinary School at Lyon (France); H. Dahlström, professor of the Superior Veterinary School at Stockholm (Sweden); J. Lignières, professor, director of the bacteriological institute at Buenos Ayres (Argentina); Dr. Malkmus, professor of the Superior

Veterinary School at Hanover (Germany); Dr. Szpilmann, professor and rector of the Superior Veterinary School at Lemberg (Austria); M. G. Tartakowsky, director of the bacteriological laboratory at the Ministry of Agriculture at St. Petersburg (Russia).

N. B.—Dr. Schütz, Geheimer Regierungsrat, professor of the Superior Veterinary School at Berlin, will present a report, prepared by one of his disciples.

Mr. Koneff, professor of the Veterinary Institute of Kharkoff (Russia), will present a report on "*Bacillus Pleuro-pneumoniæ Contagiosæ Equorum*."

3. *Hemostasis in the modern methods of castration.*

Reporters—A. Degive, professor, emeritus director of the State Veterinary School at Cureghem-Brussels (Belgium); H. Frick, professor of the Superior Veterinary School at Hanover (Germany); A. Labat, professor, director of the National Veterinary School at Toulouse (France); J. Macqueen, professor of the Royal Veterinary College at London (England); Dr. B. Plósz, professor of the Superior Veterinary School at Budapest (Hungary); J. Vennerholm, professor of the Superior Veterinary School at Stockholm (Sweden); B. Vrijburg, government veterinary surgeon at Buitenzorg (Netherlands East Indies).

4. *Pathology and therapeutics of streptococcic infections in the domestic animals.*

Reporters—A. Labat, professor, director of the National Veterinary School at Toulouse (France); J. Lignières, professor, director of the bacteriological institute at Buenos Ayres (Argentina); Dr. E. Pison, professor of the Veterinary School at Leon (Spain); Dr. R. Turro, director of the bacteriological laboratory at Barcelone (Espagne).

5. *Recent investigations (of the two last years) concerning chronic deforming arthritis of horses.*

Reporters—Dr. R. Eberlein, professor of the Superior Veterinary School at Berlin (Germany); J. Jacoulet, principal veterinary surgeon of the first class at Paris (France), and G. Joly, director of the veterinary service and teaching of the Cavalry School at Saumur (France).

## IV. Fourth Section.

1. *Physiology of milk-secretion; relation between the external form of cows and the production of milk.*

Reporters—Dr. M. C. Dekhuyzen, professor of the State Veterinary School at Utrecht (Netherlands); Godbille, veterinary surgeon of the sanitary veterinary service of the Seine at Paris (France); Dr. Kronacher, professor of the Academy of Agriculture at Weihenstephan (Germany).

2. *Influence of the various foods upon the quality of the products (meat, milk). Application of Kellner's principle in the feeding of animals from the point of view of the production of milk, meat and strength.*

Reporters—Dr. O. Kellner, Geheimrat, professor, director of the experimental station of Möckern-Leipsic (Germany); F. Maignon, chief assistant of physiology of the National Veterinary School at Lyon (France); Dr. St. Weiser, royal principal chemist at Budapest (Hungary).

3. *Prevention of the prejudicial effects of the forced breeding for special purposes.*

Reporters—Dr. Dammann, Geheimer Regierungs- und Medizinalrat, director of the Superior Veterinary School at Hanover (Germany); Porcherel, professor of the National Veterinary School at Lyon (France); Dr. Joseph Taufer, inspector of the studs at Brünn (Moravia).

4. *Teaching of zootechny.*

Reporters—Dr. Albrecht, Hofrat, director of the Superior Veterinary School at Munich (Germany); P. Dechambre, professor of the National Veterinary School at Alfort and of the School of Agriculture at Grignon (France); A. W. Heidema, veterinary surgeon at Groningen (Netherlands); Joseph Rudovsky, Landesveterinärreferent at Brünn (Moravia).

N. B.—If the business of the section allow it, discussion will take place upon a report of Dr. A. Pirocchi, professor of the Royal Superior School of Agriculture at Milan (Italy), entitled "Skimmed Milk as Food to Calves."

## V. Fifth Section.

1. *Hygiene in the maritime transport of cattle.*

Reporters—L. J. Hoogkamer, major, retired military surgeon at The Hague (Netherlands); P. P. van der Poel, government veterinary surgeon at Bandoeng, Java (Netherlands East

Indies); Rickmann, kaiserlicher Veterinärat, veterinary surgeon at Höchst-on-Main (Germany); O. Stourbe, municipal veterinary surgeon at Marseille (France).

## 2. *Sanitary police in colonies.*

Reporters—W. van der Burg, captain, veterinary surgeon in the army of Netherlands East Indies at The Hague (Netherlands); Carougeau, chief of the veterinary service at Tananarive (Madagascar); J. A. Gilruth, chief veterinary surgeon, professor of the University at Melbourne (Australia); C. A. Penning, inspector of the civil veterinary service of the Netherlands East Indies at Buitenzorg, Java (Netherlands East Indies); Rickmann, kaiserlicher Veterinärat, veterinary surgeon at Höchst-on-Main (Germany).

## 3. *Teaching and laboratories for research in tropical diseases.*

Reporters—Dr. L. de Blicq, director of the bacteriological laboratory at Buitenzorg, Java (Netherlands East Indies); J. de Does, government veterinary surgeon in the Netherlands East Indies at The Hague (Netherlands); Dr. P. Knuth, professor of the Superior Veterinary School at Berlin (Germany); H. Vallée, professor of the National Veterinary School at Alfort (France).

## VI. Communications and Informations.

To become member of the congress address, with the application, to the general treasurer, Mr. D. F. van Esveld, professor of the State Veterinary School at Utrecht (Netherlands), the amount of the cotisation and 17 shillings.

For extraordinary members (students of veterinary medicine, etc.) the cotisation has been fixed at 8s. 6d. Ladies' cards are distributed to 4s. 3d.

Applicants to membership are requested to send their names and addresses as correctly as possible, to avoid any errors.

For information relating to the details of the congress, apply to the following persons:

Prof. Dr. D. A. de Jong, general secretary of the executive committee at Leyden, 20 Maresingel.

Dr. H. Markus, adjunct secretary of the executive committee at Utrecht, State Veterinary School.

Dr. H. Remmelts, adjunct secretary of the executive committee at The Hague, 6 Tournooiveld.

Z. Th. de Jongh van Arkel, director of the secretary's office at The Hague, 6 Tournooiveld.

## THE PROBLEM OF MILK HYGIENE.

CLEVELAND, O., April 15, 1909.

EDITORS AMERICAN VETERINARY REVIEW:

GENTLEMEN—The mid-year correspondence from the Secretary of the A. V. M. A. has been received. I see that some changes in the program are contemplated and that there is to be a section on milk hygiene. This is a question that greatly interests the veterinarian and the consumer of milk. Public health requires that the problem of milk hygiene receive our very best study and attention. I have been actively interested in this great question in our city for the last six years. It was about that time I took the matter of meat and milk infection up with the committee on sanitary affairs of the Chamber of Commerce, also the acting committee on sanitation, Academy of Medicine. Dr. Schofter, of the B. A. I., and myself met these committees and got matters started. I think we have learned this in our contact and our connection with a body of physicians that they as a body of practitioners do not think seriously of bovine tuberculosis as transmissible but are awakening to the fact, while the veterinary profession has believed transmissibility to be a fact. Yet, with all of our talk and articles written, they have not had their awakening influence only as they are read and we come in contact with the physician and impress on him the facts as we believe they exist. So with the veterinary section of the International Congress on Tuberculosis, represented by able veterinarians reading papers and giving evidence on this great question has had its quickening effect. And these facts presented to the physician in his profession brings to all forcibly the existing conditions. But there is a great work to be done along this line, and I wish to make a suggestion through the REVIEW, and, first, I want to say that the veterinary section of the Academy of Medicine, Cleveland, happily associated, had the great pleasure of listening to M. P. Ravenel, M.D., Professor of Bacteriology and Hygiene, University of Wisconsin; subject, "Modes and Sources of Infection in Tuberculosis." His eminence as an American authority on tuberculosis, made the subject of great interest to the great number of physicians who heard him. His personality and delivery was such as to impress the facts, serious as they were, upon his audience. He felt that this great question demanded some of his time to say to the people through the physicians and veterinarians that he believed in two kinds of infection, human

and bovine, and the transmissibility of the same, and gave his proofs, saying we would be criminally negligent to the welfare of public health if we did not take the bovine source of danger into consideration, so that I feel free in suggesting to the committee on program that they endeavor to secure Doctor Ravenel to come over to Chicago and read a paper at the A. V. M. A. on "Modes and Sources of Tubercular Infection," having his paper fill in with others which the committee have selected for the session on milk hygiene, and invite the medical men through their medical associations to said session. I'm sure the veterinarians will be glad to hear this eminent investigator, and if we can get the medical men present to hear the veterinarians on this subject, it will be mutual and great good will come of it.

Respectfully,

A. S. COOLEY.

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### VON BEHRING'S BOVOVACCINATION RULES NOT FOLLOWED.

NEW YORK CITY, April 15, 1909.

EDITORS AMERICAN VETERINARY REVIEW:

GENTLEMEN—Professor Russell, of the Wisconsin Experiment Station and Agricultural School, in a special publication, brought forward his results with Bovovaccine. As I have been experimenting with Bovovaccine myself for nearly five years and always made it my object to follow strictly the rules laid down by von Behring, I cannot help putting in my personal objection as to the value of such experiments as made by Prof. Russell, especially as he is well aware of the fact that he committed gross negligence as to the rules of bovo Vaccination. Concerning this matter, I had personal correspondence with Prof. Russell, drawing his attention to certain facts, but apparently without the necessary satisfaction. Therefore, I am compelled to draw the attention of the eventual readers of Prof. Russell's publication to the above stated facts.

Respectfully yours,

WILFRED LELLMANN.



## SOCIETY MEETINGS.

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### INDIANA VETERINARY MEDICAL ASSOCIATION.

The thirteenth annual meeting of the above association was held January 13, 1909, at the Indiana Veterinary College, Indianapolis, Ind.

Meeting called to order by President Roberts.

Roll call. Minutes of previous meeting read and approved.

#### PRESIDENT'S ADDRESS.

I know from past experience that the address of the President is not always interesting, as we are all anxious to get into further business. I have not prepared a speech, but there are a few things that we should bear in mind, and the most important is the amendment to the present veterinary law. You know our present law is in jeopardy. There is a large sentiment trying to abolish the State Examining Board. I think it is necessary that the members of this Association, as well as the veterinarians of the state, should not take one step backward in veterinary legislation, as we would have no relief, so far as legislation is concerned, for many years. So I think that as the new amendments are ready you should pay close attention to them and weigh them well, and if you have any remarks to make, we shall be pleased to hear them.

Government inspectors are only at government abattoir, while slaughter houses should be covered by veterinary inspectors, so, if we have a few reactors, they can be taken to these abattoir, that the animals may be sold subject to inspection.

If this is the case, I think it is the duty of every state to pay for every animal condemned on the tuberculin test, at the same time I think this would work a hardship on the state and, if this is the case, then the government should pay a part of the expense. These are among the things the veterinarian has to think of.

I most surely feel that now is the time a veterinarian should be on every board of health in every county, and also that the State Board of Health should be represented by a veterinarian (Applause).

PRESIDENT—The Secretary wishes to be excused until the evening session to make his report; if there is no objection we shall pass to the next order of business.

Board of censors report favorably on names of applicants.

Motion was made and carried that such applicants be admitted as members of the Association.

#### REPORT OF STATE BOARD OF MEDICAL EXAMINERS.

The report was exhaustive, showing that the work of the Board is both hard and tedious. Motion was made and carried that the very fine report offered be adopted as read.

#### REPORT OF LEGISLATIVE COMMITTEE.

This report consisted of the proposed amendments being read by section and suggestions asked for. Under the clause defining veterinary medicine and surgery, Dr. Stubbs said leave the word castrating in, for he made more money following the so-called "quack" than if he was not in existence, so the castrating clause was left in. Thus ended all suggestions as to the proposed amendments.

#### UNFINISHED BUSINESS.

Bill of Dr. Furling for the prosecution of the Brothers Case, amounting to \$6.25, was presented by the Secretary. Motion was made and carried that the bill be allowed and a warrant drawn for the amount.

#### ELECTION OF OFFICERS.

For President—Drs. O. L. Boor, of Muncie, and Walter Langtry, of Fort Wayne, were nominated. The ballot was taken showing 37 for Dr. Boor and 4 for Dr. Langtry. On motion, Dr. Boor's election was made unanimous.

For Vice President—Drs. R. A. Craig, of LaFayette, and E. H. Pritchard, of Indianapolis, were nominated. On motion by Dr. Pritchard, the Association directed the Secretary to cast its vote for Dr. Craig, electing the latter unanimously to the office of Vice President.

For Secretary—Dr. E. M. Bronson was re-elected, the vote being cast by the President, as instructed by the Association.

For Treasurer—Dr. J. W. Klotz was re-elected in the same manner.

For Board of Censors—Drs. E. H. Pritchard, of Indianapolis; J. B. Archer, of Specer, and C. P. Wilson, of Greenfield, were elected in the regular way.

## LITERARY PROGRAM.

(1) Should The State Assume Control of and Attempt to Stamp Out Influenza or Strangles? Dr. Frank Nelson, of Lebanon.

The paper dealt with the subject along the line of its cost to horses as being great enough to cause alarm, and suggesting laws along the line of those for tuberculosis.

*Discussion.*

Dr. Carter—What do you consider the loss to the county has been in the last year from influenza?

Dr. Nelson—That would be hard to say. You can not get a record of them. There are many who loose two or three horses in their herd, but the loss of business, while animals are sick, is more than the animals themselves.

Dr. Carter—I mean the loss to the farmer?

Dr. Nelson—Well, I have not kept tab on that close enough so that I could give any statistics; I would have to run over my records to give the amount of loss, but it has been considerable.

Dr. Carter—I should judge that Fayette County has lost \$5,000 per year. In my mind it would be quite a job to arrive at any definite figures.

Dr. Bolser—I want to ask the gentleman from Lebanon, if he does not think that influenza is contagious? I have in the last five years used a great many horses in my driving, and I have never had a case of influenza.

Dr. Nelson—That is very true, but remember a great many cases of influenza, that are supposed to be such, are not. I think a great many of these cases are pneumonia, but many veterinarians have diagnosed them as influenza.

Dr. Craig—Both diseases are curable, are they not?

Dr. Nelson—Speaking from the standpoint of a medical conversation, and taking the same stand on diphtheria, the average M. D. will say, if it is contagious, are you taking the proper precaution to prevent its spread? It is like tuberculosis; we do not notice nor do we take account of the death rate. We pass that because it is so common.

*Case Reports*, Dr. Clyde Hess, Kentland, Indiana.

On December 18 I was called out to see a horse that the owner said was a little off his feed. When I reached the stable I found the patient standing back in the stall with his head down, limbs

swollen to two or three times their natural size, pulse beating 60 per minute, hard and wiry, breathing accelerated, temperature 105. Upon inquiry I found the patient had been in harness every day up to four or five days previous, and during which time he had been turned out in the stalk field during the day and stabled at night. I diagnosed the case as one of lymphangitis, gave a physic ball, and a capsule each of Terebinthinae and Aromatic Spts. of Amonn. with hot stoups to the limbs, leaving to be given:

R<sub>x</sub>.

Quinine Sulphate.

Aromatic Sulphuric Acid.

Fluid Extract Nucis Vomicae.....aa 3 iv

Tincture Ferri Chloridii.....i

Tincture Gentianae .....3 iv

Aquae .....qs. ad. 3 viii

Sig. 1½ ozs. every four hours.

On my return December 20, I found the swellings had almost entirely subsided, temperature down to 100, respiration nearly normal, the pulse quite weak and very little appetite for grain, although eating considerable clover hay. Adding to my former R<sub>x</sub>. Fl. Ex. drs. iv Digitalis, and leaving to be given twice daily half oz. doses of Pot. Nit. On December 24 he seemed worse, and I was again called, but being out of town, the owner decided to wait for my return, but on the following day a practitioner from a neighboring town was passing and was called in to look the patient over. After looking the patient over and finding a temperature of 103, patient in a standing position, and the owner telling him that the animal had not lain down for 36 hours, the passing Veterinarian told the owner that he had a case of peritonitis and that my treatment had only aggravated the case, and that he was too far gone to receive any help, and that he would be dead before the following morning. On my return, December 28, I was at once called, and having in company with me a neighboring veterinarian, asked his opinion. After looking him over thoroughly, and finding a temperature of 103, eyes sunken, pulse weak, constantly changing one foot from one to the other, he diagnosed the case as a renal abscess with a pleural exudate which was likely, secondary to the lymphangitis. On December 29 patient still standing, with very little change, only the temperature increased to 105 and the respiration more

laborious. On the night of December 30 the patient died. Post mortem—Found a small quantity of pus in the pelvis of the kidney and ureters. The pleural cavity contained considerable exudate with pus and the lower lobes of both lungs were gangrenous.

*Discussion.*

Dr. Scripture—I would like to ask the gentleman if he really considered that a case of lymphangitis, or a case of purpura haemorrhagica?

Dr. Hess—I would consider it a case of lymphangitis, because the horse had been perfectly well before and purpura, as I understand it, always follows a sick spell of some sort.

Dr. Scripture—I had a case exactly like it. I treated it identically the same as he did, and before I had gone a couple of days I realized I was up against purpura. A veterinarian ran into the case accidentally, and we treated it together and it took two months to cure that horse. He was sold and went to Chicago as a driving horse.

Dr. Pritchard—I believe the gentleman diagnosed the case correctly; in purpura we usually have swelling around the body and head, and he don't describe any in this paper.

Dr. Boor—This swelling came up in 24 hours; the animal's body is first class.

COLIC.

Dr. O. C. Newgent.

This paper was so good in its etiology, pathology, symptomatology, prognosis were so well handled that we could not raise a discussion on them, but the treatment, as usual, started the discussion, which was as follows:

Dr. Bronson—This is a good paper, and I don't know how I can start anything, unless it be on the treatment.

Now, we will not include the stomach, but will go to the intestinal tract. I have a hobby; in my estimation, the one safe bet, pardon the slang, and that is Arecoline. Out of 60 cases four died, and post mortems convinced me that the theory I had in mind was undoubtedly correct. The posts were one volvulus, one intussusception and two ruptures.

Member—It seems to me that there is something wrong. We ought to be here for the good we can get out of it and if we cannot teach each other something, we are not doing any good at

this meeting. So far as Dr. Bronson's treatment is concerned, I realize that he is right in his prescription, only he should go farther into detail.

Dr. Bronson—You reminded me that I did not go far enough into detail; you are perfectly in order, I assure you. My intentions are, to my fellow practitioners, that if I think I know something that may be new or of interest to you, I am only pleased to tell it, and I hope you will be the same with me. I was led to take this line of treatment up two years ago. Dr. Davis read a paper at that time in which he broke away from the old line treatment and advised eclectic drugs, and his departure only made me determined to experiment along the line I had in mind, but was somewhat timid about taking up. I went to a manufacturing chemist house here in the city, and put the proposition up to them. They said: What do you want to carry out your experiments? I informed them that I could not say definitely as to a definite combination at that time, but did tell what was needed to start; I got it promptly and started in, giving them reports of all 60 cases, which they have in pamphlet form, and which will probably be of more benefit than my explanations at present. The literature on Arecoline was so hard to get hold of, that I was held back in my desires. The only thing I could learn of it was that it was a producer of secretions. At last I got in communication with a lieutenant that was in the Boer war with the cavalry, and his reports were the final thing that convinced me to go on with Arecoline. My theory was if Arecoline produced secretions, it would soften the contents of the intestinal tract and the contents would be more easily passed by the vermicular motion. I found its action upon the heart is somewhat like *Digitalis*, in that it slows it down and makes it much stronger. Occasionally I found the action did not last seemingly long enough, so I added Eserine and found that, instead of lasting 30-40 minutes, it lasted from an hour and one-quarter to an hour and one-half. I also found that the Eserine checked or depressed the heart to some extent, so I added *Strychnia* to the combination and I got the present formula of: Arecoline Hydrobromate 1 gr., Eserine Salicylate  $\frac{1}{2}$  gr., *Strychnia Sulphate*  $\frac{1}{2}$  gr. I rarely ever have to resort to the physic ball or the trochar any more, although sometimes *F. E. Nux Vomica* is left to be given in small doses 2-3 hours for 3-5 doses, simply for its action as a peristaltic stimulant.

Dr. Carter—Did you ever try giving smaller doses of Arecoline? Half grains have accomplished seemingly a wonder for me. I have used quite a little in  $\frac{1}{4}$  to  $\frac{1}{2}$  grain doses; in large doses I do not get the peristaltic action as well as with the smaller doses.

Dr. W. B. Craig—My experience with colic leads me to the belief that Dr. Newgent had a splendid paper. I do not know that there is any hard and fast rule for the treatment of colic, as there are no two cases alike; there are no two cases that have the same symptoms. It seems to me that when a man goes to see a case of colic he wants to take up the expression of his patient; he wants to consider carefully the condition of the pulse; he wants to consider the temperature; if you have a horse that is scared, you have something more on your mind, but if you have a clear case of colic, then give him something to start it up; give him a small dose of Arecoline, then follow up with a dose of oil. At the same time, if the pulse is not good, fortify the heart with a little Strychnine. I am constitutionally opposed to giving a horse anything in the narcotic line to stop his pain simply because it satisfies the owner. Pain is only an indication of some derangement, and he will intimate where his pain is. I have not had as wide an experience as some of you, but I have used the hypodermic and I think I have better results with Esserine.

Dr. Scripture—If I have peritonitis, I leave out Arecoline, as it is a dangerous base if you have peritonitis.

#### CASE REPORTS.

Dr. H. E. Titus, LaFayette, Indiana.

Dr. Titus was not present, but sent his reports by mail and they were read by the Secretary.

Case (1) Hernia of intestine through the Foramen of Winslow.

I was called to see an eight-year-old gelding in the early morning, belonging to the Transfer Co., supposed to be suffering with colic. Upon my arrival I found the animal in a great deal of pain and at times sitting on his haunches. It was not very much trouble to diagnose an obstruction of the intestines, and I gave hypodermics strychnia, pilocarpine, esedine and arecoline. Patient gradually grew worse until 3 p. m., when he died. Post mortem—A small portion of the small intestine,

strangulated, was through a small opening near the stomach, which, upon close examination, proved to be the foramen of Winslow.

### Case (2) Toxic Gastro-enteritis in calves.

Received a call from the northern part of the state asking me to call to see a herd of pure bred Hereford calves that were sick. When I reached the farm at dark I found a heard of 38 young calves still with their mothers, four dead and five sick, the rest not looking the best. The first thing I did was to hold a post mortem on one of the last to die, and it proved to be a very acute case of gastro enteritis. Congestion of the mucus membrane of the abomasum and intestines with sub-mucus infiltration.

Symptoms—These varied somewhat. Removed 5 from the herd and their temperature varied from 103-105½ F., weak, remain down most of the time, grind their teeth; one would attempt to roll over, as if with colic; some a profuse diarrhoea, others constipated.

Treatment—Small doses of Magnesia Sulph., a few drops of Bacterol in strong coffee and eggs every two hours; this was continued during the night. The remainder of the herd were given each three doses of Magnesium sulph. and were then placed on artificial Carlsbad salts three times a day. Next I proceeded to inspect the rations fed to the nurse cows and found all the food wholesome except the ensilage, which was mouldy and some of it decomposing; this portion of the ration was discontinued and upon my return in 4-5 days I found there had been no more deaths in the herd, and it looked much better, especially one valuable bull calf three weeks old, whose temperature was the highest and I had given an unfavorable prognosis upon my first visit.

### Case (3) Rupture of the liver in the horse.

This is not rare case, but it is a case that gave me some trouble as to its nature. July 7 was called in the city to see a six-year-old horse supposed to be suffering with colic. I found my patient eating and not inclined to move around very much and when he did, it was with caution; at times he would show some pain, but at no time would he roll; temperature, 103 F. From the owner I learned that 4-5 days before this horse had a hard fall, but had been able to do his work as before. I left a few doses of Cannabis Indica and would return the next day. Upon my return found patient improved, so to speak, tempera-



ture 102, and eating, showing no pain. On 10th received word that he was worse and ordered him to hospital, in which six hours after he died. Post mortem: It revealed one of the largest livers I have ever seen. It seems that he should live nine days after rupture of nearly two-thirds of the organ.

Case (4) Paraplegia followed by Monoplegia in a three-year-old coach stallion.

This was a case recently imported and was being broken to show in the harness class at the International. He had been hitched perhaps a half dozen times when I was called to see what was the matter with him. I found a nice case of paraplegia, which is very common in this class of young imported horses and, as there was neither anesthesia nor vesical paralysis, I was inclined to think that it was of cerebral origin. Administered a cathartic, placed him upon large doses of Potassium Iodine alternating with Fowler's Solution. Patient remained about the same for 6-7 days, when one day I called to see him and asked the attendant to walk him out of the stall and was surprised to see him only able to use one front limb; he being able to use the left, the other dragging. On returning the next day to take a photo of him, he walked out as if nothing had happened. He has been under treatment about eight weeks and is progressing as well as the average case of paraplegia does, and that is very slow.

### *Discussion.*

President—It is apparent that these cases of the calves were brought about by the ensilage. We will ask the gentlemen present if they have had trouble from this source?

Dr. Phillips—I would like to know if any one thinks this was brought about by the ensilage direct, or through the milk. As I understand it, the calves were 2-3 weeks old, and they were eating some ensilage.

President—Of course, I do not believe that paper stated that they were eating ensilage, but from my experience I should rather believe the calves were infected from the ensilage direct than from the milk.

Dr. Axby—A condition exists in a certain dairy near Lawrenceburg very similar to that described in the paper. At the same time it seems that it is impossible that a calf so young would become infected as described in the paper, but in these cases the mother is always sick and continues until the calf is old

enough to wean, while in the case I have in mind the calf was sick while the mother might be all right. At the time the ensilage was getting low, the silo being only about one-fourth full. This fellow has proof to his entire satisfaction that this ensilage produces the effect, either to the calf direct or the mother gets it, and transmits it to the calf through the inoculated milk.

Dr. Boor—I will ask if these calves became sickened, if the dams were not sick, and when they were not eating ensilage?

Dr. Axby—Yes, those that were sick, but the mother does not get so sick proportionately. The calf usually dies; it does not matter whether it is still sucking and gets no solid food or not. It seems to die from lack of assimilation.

Dr. Boor—What kind of a bottom did he have in the silo?

Dr. Axby—Cement.

Dr. Boor—Was all the ensilage fed from the bottom?

Dr. Axby—Yes, sir.

Dr. Boor—Was only the ensilage in the bottom in good condition?

Dr. Axby—Around the outside it was bad, and in the centre was good.

Dr. Boor—This being the case, that ensilage on the outside, or the edge of the silo would be unfit to feed, and we want to remedy it. It seems to me that if the silo is properly constructed, that the lower edge should be the best, from the reason that it is hermetically sealed and we should have the best ensilage at the bottom.

Dr. Axby—In this particular silo there was a crack and a leak from which the sorghum molasses ran out, and he concluded that he would discontinue the use from that silo. It was in this region that he got the ensilage that was most poisonous, and we reached the conclusion that this crack was the cause of the difficulty.

Dr. Boor—Was this silo entirely of cement?

Dr. Axby—No, sir; cement base and wood.

Dr. Boor—I should like to suggest that lathing on the inside can be made, the lathing then plastered with cement. I noticed have seen some silos built that way and the ensilage was first class. Of course, the base must be first class in every respect, but a silo built this way should be perfect, and the ensilage on the bottom should be as good as that on top.

Dr. Scripture—There is one man I have in mind that runs a dairy in our place and he had a silo built inside the barn and dug a pit four feet deep and cemented that up solid with concrete

even with the floor; and then he built a wall with lumber and filled that with sawdust between the two walls, and forever after that he did not have one bit of trouble. He just kept the air from it. In starting to use this, you must throw off from 2-3 feet in depth, because this ensilage seals, and unless you keep the air from it you will invariably have this trouble. He had trouble when he used the old silo, but none since he used the new one.

Dr. Boor—I think that will solve the trouble myself.

Dr. Carter—I had a case of gastro-enteritis myself in a calf. I held a post mortem and when I had made my decision, they were not satisfied, and I told them to pack the head in ice and send it to Indianapolis to the state department. They did, and were sent back word that it was a clear case of hydrophobia, and had the people scared quite a bit, but we have not seen any cases of the disease as yet.

#### SHOEING AND LAMENESS.

By Dr. Otishiner, Butler, Indiana.

This paper was so thoroughly written that the discussion was nil. The paper was worthy of a place in the minutes, but he saw fit not to allow us that privilege.

During a short wait for the lantern, we returned to some unfinished and new business, as follows: Motion was made and carried that the secretary purchase a new seal, as our name was changed at our last meet, from Indiana State Veterinary Association, to Indiana Veterinary Medical Association.

The secretary was also instructed to issue Dr. Franklin C. McCoy a new certificate, to replace one lost in the mail.

Motion was made and carried that the secretary and treasurer buy a typewriter.

Meeting adjourned until 8.30 p. m.

#### NIGHT SESSION.

Meeting called to order by President Boor.

Report of Treasurer Dr. J. W. Klotz, and of Secretary Dr. E. M. Bronson.

On carried motion, both the above reports were adopted as read.

#### RARE CASE IN PRACTICE.

Dr. Payson Schwin, Elkhart, Indiana.

A large bay gelding about 11-12 years of age, in good, vigorous condition, owned by the Am. Ex. Co.

When first called to see him, found his penis in a state of erection, with prepuce and sheath considerably congested and swollen. I scarified the swollen parts and used hot applications with mild liniment frequently applied, which reduced the enlarged prepuce, but the erection stayed for over three weeks, and only got it reduced by the use of cold water applications followed by an elastic bandage applied to the protruding part; after a week of this treatment the erection disappeared, but left the penis partially paralyzed, about 4-6 inches being pendant all the time.

The horse is now in service and seems in the best of health, except this local defect. What caused this condition I have never been able to give a rational cause.

### *Discussion.*

Dr. Roberts—This case is something that is entirely new to me, and it is one of just more than passing notice, and I would like to ask if there was any way of reducing it or getting it back into the prepuce?

Dr. House—I saw an almost similar case, only the penis was in a constant state of relaxation and became considerably swollen. However, the man was very poor and the horse was not very valuable and he treated him. I did not know anything of it for several weeks, and the man told me the animal got all right.

Dr. Boor—I will ask if there is any impediment in the animal's walk?

Dr. Schwin—None at all; he is a horse in good physical condition, and in passing the soft rubber catheter I never found one pass easier.

Dr. Bronson—Does he have any trouble in urinating?

Dr. Boor—None at all.

Dr. C. I. Fleming, of Terre Haute, Ind., presented an excellent paper on "Tuberculosis—Possibilities of Infection and Contagion," after which Dr. R. A. Craig, of LaFayette, Ind., gave a most instructive talk on tuberculosis, illustrating the same with lantern slides.

Drs. G. H. Roberts and J. C. Roger spoke on foot-and-mouth disease, illustrated with slides. Dr. G. H. Roberts also interested the members on the subject of epizootic lymphangitis.

The program being finished, the president announced his appointments for committees for the ensuing year.

Motion made and carried to adjourn to meet 9 o'clock January 14, 1909, for the clinics.

Reassembled 9 a. m. January 14 at Indiana Veterinary College.

### CLINICS.

An unfortunate accident greatly marred the program to have been carried out by the Arrangement Committee. The accident was the breaking of one of the senior student's left limb, just above the ankle. The surgery, however, was as follows:

Tenotomy of the Perforans, standing—Dr. John Allen, Greenwood, Ind.

Peroneal tenotomy; standing; anesthetic, Codrenin; scissors operation—Dr. E. M. Bronson, Indianapolis, Ind.

Umbilical hernia, dog; re-cropping ears, same animal—Dr. S. C. G. Kelly, Elwood, Ind.

Double Neurectomy; standing; anesthetic, Codrenin; scissors operation—Dr. E. M. Bronson, Indianapolis, Ind.

Double neurectomy; table; no anesthetic—Dr. H. E. Titus, LaFayette, Ind.

Double tenotomy; "nigh hind;" table; no anesthetic—Dr. E. M. Bronson, Indianapolis, Ind.

Adjourned to meet January, 1910, unless otherwise ordered.

E. M. BRONSON, Secretary.

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### IOWA VETERINARY ASSOCIATION.

The twenty-first annual meeting was held in Knights of Columbus Hall, Fort Dodge, Iowa, January 19, 20, 21, 1909, with President D. E. Baughman in the chair. President delivered an able address. Upon motion of the secretary, the minutes of last regular meeting, as published in the April, 1908, number of the AMERICAN VETERINARY REVIEW, were duly accepted.

Dr. C. E. Stewart reported the death from appendicitis of Dr. J. R. Saunders, of Corydon, a graduate of Chicago Veterinary College, 1895. The reports of the secretary and treasurer were received by the association, the treasurer's accounts being approved by the auditing committee. Resignations of Drs. J. H. McNeil, Columbus, Ohio, S. T. Miller, Wenatche, Washington, and F. R. Roys, Cashmere, Washington, were accepted and all three were elected to associate membership.

Dr. A. L. Wood reported peculiar symptoms in herd of short-horn cattle which occurred last October, beginning with rubbing against wire fence persisted in until skin and underlying tissues were extensively lacerated; animals were wild, excitable and violent, hard to control. Pulse, respiration and temperature accelerated; animals bellowing toward last, one showing symptoms of abortion prior to death; young heifers were most susceptible. These cattle were running in pasture through which ran a small creek and were fed corn fodder. All affected animals died.

Post mortem—Rumen nearly normal, congestion of arterioles, cultures gave no clue.

Dr. Drinkwater reported similar symptoms in fattening cattle which were being fed musty corn.

Dr. H. L. Stewart thought same came from eating buckeye.

Dr. G. M. Walrod reported cattle licking udder until it bled, rubbed until lacerated, bit legs until they were badly torn. Post mortem showed intestinal tract dry throughout; treatment, changed feeds and gave physics.

Dr. Hazlet saw similar symptoms in pasture where hog wallow was at head of creek; there was long grass along this bottom and creek overflowed occasionally.

Dr. J. W. Scott, similar conditions, only post mortem showed small, hard nodules, same as nodular disease in sheep.

Dr. T. F. McEvers' difference was that steers could not move, would push in corner until death.

Dr. H. M. McConnel reported 45 head out of which 21 died. Symptoms were as follows: Switching of tail, stamping, rubbing legs against other. Lived from 12 to 36 hours; were being fed millet hay about out; changed to timothy and cattle were eating seed which was musty; died in convulsions. Post mortem showed intestinal tract full of seed. Dr. H. B. Treman was called to see calves all died within three hours after showing symptoms, which were all same. Were being fed sweet corn fodder. Changed feed, gave laxatives; none died after next day. Dr. Joehnk saw similar conditions, except that cattle were older. Dr. R. R. Dykstra reported similar symptoms. Post mortem showed hemorrhagic septicemia. *Bacilli bovo septicus* was isolated. He suggested thorough disinfecting after each outbreak.

Prof. M. H. Reynolds suggested that careful post mortem might have shown hemorrhagic septicemia, particularly if skin and endocardium were thoroughly examined. Bacteriological examination in that case would have shown *bacilli bovo septicus*. Calves seem to be most susceptible.

Dr. F. J. Nieman presented "Little Things that Help in Practice."

Dr. H. B. Treman presented "Scraps;" Dr. Wm. Drinkwater presented "Colic."

Meeting adjourned at 6 o'clock.

Meeting called to order at 8 p. m.

Dr. C. W. Anderson reported case of pericarditis in the ox.

Dr. H. L. Stewart reported urethral calculus of the ox, which brought one of the best discussions of the meeting, as to the advisability of shipping at once, or of operating by cutting down onto the urethra over ischium and continuing to fatten a number, claiming the latter to be best.

Dr. A. E. Richardson reported a case of purpura hemorrhagica.

Dr. H. M. McConnel gave a few minutes' talk on bovo vaccine.

Dr. W. E. Miller reported a case.

Dr. G. M. Walrod reported experience with swine vaccination as supplied by the Sorby Vaccine Co. A number related their experience with this product. Some were quite well pleased with the results obtained. Others declaring there were no results.

Dr. F. H. Hollingsworth reported case of choke very high; could almost feel with fingers through mouth, but could not move within reach. Operated, making incision one inch long through walls of oesophagus; removed a cob about two inches long; sutured three different times. Could not get sutures to hold, sloughing out each time. Afterwards resorted to holding skin together while animal was drinking or eating sloppy food; this continued for 25 days, animal recovering slowly and wound finally healed with a very small scar.

Meeting adjourned.

January 20. Meeting called to order 10 a. m.

Dr. P. O. Koto read paper on bovine tuberculosis and its eradication in Iowa.

Dr. H. E. Talbot presented a paper, tuberculosis in Iowa herds.

Dr. J. W. Kime (M. D.), presented draft of a bill dealing with tuberculosis, which was to be presented to the Legislature. This was thoroughly discussed and in the minds of the majority was not worthy of the support of the veterinarians of Iowa.

Your committee on Sanitation would report that they recommend that steps be taken to see that our railway cars receive better cleaning, more thorough disinfecting, and to be kept in a more sanitary condition, as we believe this to be one of the chief sources for spreading disease. Our stock cars are not cleaned often enough, and when they are cleaned, it is often out in the country beside some small stock yard, or in some slough where the litter is left to decompose and the rains carry it down stream. The Canadian Government has refused to even admit cars that have been through the infected district where foot-and-mouth disease exists. Our slaughter houses where government inspection is not maintained, need attention, as they are usually far from being in a sanitary condition, generally located along some small stream where all refuse is thrown, the first little freshet carries all down stream, spreading hog cholera, tuberculosis and many other diseases.

Our dairies should also be put in a more sanitary condition, testing the cows for tuberculosis, branding those condemned, using the letters T B so that unprincipled owners can not pull out ear tags and sell or put back in the herd a cow that has been condemned for tuberculosis. The premises should be thoroughly disinfected; this should be done under the supervision of the state, for when left for the owner to do, it is only half done and in many cases not done at all, and the non-reactors are put in the same stalls and soon contract the disease. Attention to these things, together with proper construction of buildings, so that abundant sunlight and fresh air can be admitted; this, with good drainage of the building sight and yards would do much toward hindering the spread of contagious diseases.

Afternoon of second day.

Professor M. H. Reynolds, of Minnesota Agricultural College, delivered a fine lecture on "Safe, Clean Milk." This lasted over an hour, and was illustrated by slides thrown on a curtain. This was one of the most instructive and entertaining papers presented to the association, and every veterinarian present received information that will aid him in his efforts to establish and maintain milk sanitation in his community, a subject which is uppermost in the minds of a great many veterinarians of Iowa just at present. It developed in the discussion that about fifteen of the cities of the second class, as well as a number of the larger, now have municipal regulations regarding the milk supply and demanding a tuberculin test for all dairy cows. A vote of thanks was tendered Dr. Reynolds.



Dr. J. W. Kime, M.D., of Ft. Dodge, delivered an illustrated lecture on "Comparative Tuberculosis." These two lectures were delivered at the Magic Theatre and were well attended by the residents of the city and the dairymen generally, and will undoubtedly help to obtain cleaner, better, purer milk for the city of Ft. Dodge.

There was some discussion after the meeting was called to order in the assembly room to which the meeting adjourned from the theatre.

Twenty dollars was appropriated to Baughman & Kaderabek for expenses of the hall and the clinic and rent of hall.

Secretary was authorized to purchase a typewriter to be property of the association.

On motion, Secretary cast ballot of the association for election to membership of those applications approved by the Executive Committee.

Applications for membership of Mahlon Russell, Bangor, Iowa, and Harvey E. McGee, Osceola, Iowa, graduates of the Western Veterinary College, were refused and Secretary authorized to refund their money.

Mr. George Judish, Instructor of Pharmacy at Iowa State College, gave an address on solutions official and non-official which was one of the good things of the meeting. Mr. Judish has the happy faculty of being able to talk. REVIEW readers miss this treat owing to the Secretary not being a shorthand reporter. A vote of thanks was extended.

Election of officers:

Dr. H. E. Talbot, President, Des Moines.

Dr. A. L. Wood, First Vice-President, Hampton.

Dr. A. S. Brodie, Second Vice-President, Cedar Falls.

Dr. Hal. C. Simpson, Secretary-Treasurer, Denison.

Dr. W. A. Heck, re-elected as member of Executive Committee.

Dr. H. E. Talbot, as President, being ex-officio a member of the Executive Committee, resigned from the committee.

Dr. F. J. Nieman was elected to fill unexpired term on committee.

President Talbot was escorted to the chair and made a neat speech of thanks.

Dr. J. W. Scott presented a volunteer paper on tuberculosis, after which a general discussion of all the papers on that subject took place.

Dr. W. B. Niles, chairman of Committee on Disease and Treatment, reported. The report was particularly on the subject of hog cholera vaccine. It was very interesting and listened to closely.

Dr. C. H. Stange, Dean Veterinary Department, Iowa State College, presented a fine paper on "Serum Immunization for Hog Cholera."

Committee on Resolutions reported as follows:

Whereas, The Iowa Veterinary Association urge their members to get in closer touch and more helpful relation with the live stock interests, particularly in the matter of control work with infectious and preventable diseases and in work for the improvement of live stock; therefore be it

Resolved, That the Iowa Veterinary Association heartily approve the effort of the State Veterinary Department to secure an appropriation for the reimbursement of cattle reacting to the tuberculin test;

Resolved, That we recommend an ordinance be passed by all cities and towns requiring inspection of dairy and meat products;

Resolved, That this association recommend that the thirty-third general assembly appropriate a sufficient sum to establish a serum station for the purpose of producing a hog cholera vaccine to be furnished the swine producers at actual cost.

Whereas, The U. S. Pharmacopeia is so to be revised; and on account of the importance of the revision from the standpoint of veterinary practice, be it

Resolved, That in the sense of this association that at least one member of the board of revision for the U. S. P. should be a qualified veterinarian.

Whereas, As a number of the medical profession and Drs. Baughman and Kaderabek have extended to us in convention assembled a lunch and smoker which was enjoyed by all present; therefore, be it

Resolved, That we extend a vote of thanks to the members of the medical profession and to Drs. Baughman and Kaderabek for their very courteous evening's entertainment.

Whereas, Death has removed one of our esteemed members, Dr. J. R. Sanders, of Coroydon; be it

Resolved, That the members of this association extend to the bereaved family their heartfelt sympathy.

Be it further resolved, That these resolutions be spread upon our minutes, also a copy of these resolutions be sent the bereaved family.

A long list of new members were admitted.

HAL. C. SIMPSON, Secretary.

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## CENTRAL CANADA VETERINARY ASSOCIATION.

The seventh annual meeting of the Central Canada Veterinary Association was called to order in the City Hall, Ottawa, Canada, by the president, Dr. Kenning, at eight o'clock in the evening, March 10, 1909.

The president, after thanking the association for the honor conferred upon him by his election to the presidency, alluded to the efforts made during the summer to organize a suitable clinic, which, however, had to be postponed.

The election of officers was then proceeded with which resulted as follows: Hon. President, J. G. Rutherford, Ottawa; President, W. C. McGuire, Cornwall; Vice-President, J. B. Hollingsworth, Ottawa; Secretary-Treasurer, A. E. James, Ottawa; additional members of the Council, Drs. Higgins, Harris, McAlpine, Kenning, Kennedy, W. C. Young, Hilton and Boucher.

Drs. W. C. McGuire and A. E. James were appointed delegates to the coming meeting of the American Veterinary Medical Association, which is to be held in Chicago next September, under the presidency of Dr. Rutherford, of Ottawa. Dr. Rutherford urged as many members as possible to attend the convention as they would be well repaid for their trouble and expense.

The following were received as new members to the association: A. G. Acres, V.S., Sudbury; R. Barnes, V.S., Ottawa; D. E. Demoulin, V.S., Lancaster; R. T. O'Hara, V.S., Maxville; Thos. McFarlane, V.S., Ottawa.

Dr. Chas. Elliott, St. Catherines, president of the Ontario Veterinary Association, wrote regarding his inability to be present but promising his assistance in an effort to secure legislation.

Dr. J. G. Rutherford, Veterinary Director General for the Dominion, was called upon to address the association concerning the steps recently taken in connection with veterinary legislation in the province and his remarks are summarized as follows:

“Through the action of the present Provincial Government in assuming the responsibility for the Ontario Veterinary College, the veterinary profession has been saved much labor and annoyance. We cannot be too strong in our expressions of appreciation in this regard. In addition it is anticipated that the University of Toronto will give definite recognition to the institution under its new management and the Senate of the University is now considering a new degree.

“The old institution has taken a new lease of life, but it must be borne in mind that it is quite impossible for Dr. Grange to make a complete and radical change during his first year of office. Dr. Grange is a very hard worker, and I feel satisfied that in one and a half or two years this college will be the equal if not the superior of any three-year college on this continent. Eighteen men, previous graduates, are now completing their third year in anticipation of receiving the new diploma, and there are nearly two hundred men in the other classes; these are most encouraging features.

“I feel satisfied that the status of the college will still be greatly improved, although many changes have already taken place.

“With reference to proposed legislation, a subject of importance to all present, it may interest you to know that two weeks ago I attended a meeting of the organization committee, at which Dr. Grange presented a draft bill. After discussing various features I suggested the repeal of all Acts now in force respecting the profession in the province. I further suggested that it was advisable to employ a capable solicitor to draft and assist in the passage of a bill by the Legislature. As the Government is introducing the bill the labor required is not so great as would otherwise be the case, yet it is necessary to have someone to look after our interests.

“The fund collected some years ago is available for this purpose, and the services of Col. Robertson, an attorney of repute, well versed in matters of this sort, have been secured. He has been provided with copies of the bills in force in Manitoba, Alberta and Saskatchewan, as well as that of the Royal College of Veterinary Surgeons. A draft bill was received on Friday last and as there were some matters requiring a change I was in Toronto yesterday to discuss them and am able at this time to present a draft bill to this meeting for consideration.”

Dr. Rutherford then read the bill clause by clause, explaining the provisions, outlining the scope, as well as defining the requirements of practitioners.

A free discussion was indulged in by Drs. Thacker, Boucher, Lynchke, James, McGuire, W. C. Young and others. In this discussion many points were brought out indicating that features apparently not covered by the draft as read were amply provided for. The draft as read was unanimously accepted by the association.

An appreciative vote of thanks was passed to Dr. Rutherford for his labors in advancing the interests of the profession.

Dr. Rutherford in reply stated that the veterinary profession had been much maligned and very inadequately compensated for their knowledge and skill. In the Health of Animals branch of the Department of Agriculture there were now about one hundred and fifty graduate veterinarians employed, and in the future it will doubtless continue to expand its influence and to train veterinarians for specialized work in the control of contagious diseases and meat inspection.

Dr. James presented a very interesting case report asking for a diagnosis, as follows:

On January 23d he was called to prescribe for a mare with a cough which yielded promptly to treatment. On the 8th of February he was again called to see the same mare then suffering from an inflammatory condition of the right eye. There was an extensive tumefaction of the lids and profuse lacrymation. An examination of the cornea revealed minute depressions when viewed from the side; the conjunctiva was injected and oedematous. The appetite was unimpaired and there was no constitutional disturbance.

The coachman could give no history of the case, it having come on during the night. The conclusion then reached was that the mare had injured the eye on a staple driven into the wall immediately above the feed box.

The treatment consisted of frequent boric acid fomentations and the eye was continually covered with a pad saturated with boric acid and opium in solution. Under this treatment the eye regained its normal appearance in forty-eight hours.

On February 11th another call was received to see the same case, at which time the other eye was found to be affected, presenting similar symptoms but accompanied with severe constitutional disturbance. The pulse was 80, temperature 105 2-5° F., loss of appetite and tremors.

The mare was placed on a soft diet, sulphate of quinine was prescribed in  $\mathfrak{3j}$  doses every three hours, the eye being treated as in the previous instance.

On the following day there was a reinfection in the right eye; there was extensive tumefaction, a profuse discharge of pus from both eyes, which were very sensitive on palpation. An examination on the third day after the involvement of both eyes the cornea of each was opaque and presented the appearance of two milky white balls. The temperature subsided and the appetite returned.

On February 25th the tumefaction had disappeared, the cornea of each eye had cleared, but complete cataracts had developed in both eyes.

February 15th the mare was placed on Pot. Iodide  $\mathfrak{3j}$  doses three times a day, and in addition a 2 per cent. solution of the same drug was applied to the eyes three times a day.

The pupils in spite of the repeated application of eserine have remained dilated.

For the past ten days the mare has been given hydrarg-chloridum corrosivum gr. iv t.i.d. and the application of eserine has been continued.

The peculiar features of the case are the rapid recovery of the eye first affected, the subsequent reinfection, the severe constitutional disturbances and the short course to complete blindness.

Two other horses in the same stable have not manifested a similar affection and the coachman was instructed to thoroughly disinfect his hands before attending to them.

In conclusion Dr. James asked if any had seen a similar case, and what is the diagnosis, glaucoma or gonorrhœal ophthalmia.

An interesting discussion followed but no further light was thrown on the subject which fully established the diagnosis.

Dr. A. W. Harris also reported a case of tetanus following a minor surgical operation with 24 hours. As it did not seem possible that tetanus could have developed so quickly after his slight operation, considering the precautions taken, he was later able to ascertain that the real cause was a wound in the foot, resulting some ten days previously from an injury with a piece of plate glass. The removal of the shoe and examination of the hoof revealed the lesion, which was very small. This, however, was drained, the animal placed on the carbolic acid treatment, and an uneventful recovery followed. He pointed out the necessity of very carefully observing every symptom, however slight, when

working with a horse, as he had noticed in this instance, on the day of the minor operation that the membrana nictitans was slightly exposed when placing the twitch, but this feature was passed as of minor importance until later developments impressed its meaning.

Among those present were: Drs. A. W. Harris, R. Barnes, A. E. James, J. B. Hollingsworth, J. G. Rutherford, W. W. Boucher, C. H. Higgins, T. McFarlane, E. A. Bruce, P. E. Pallister, A. I. Telmosse and Wm. Laidlaw, Ottawa; L. J. Demers and T. H. Richards, Hull, Que.; P. J. Lynchke, Carp; J. W. Kenning, Pembroke; D. McAlpine, Brockville; W. C. McGuire, Cornwall; W. C. Young, Almonte; Wm. Nichols, Kingston; Geo. W. Higginson, Rockland; Thos. Thacker, Renfrew; A. G. Young, Merrickville; Geo. Jemison, Prescott; J. J. McGregor, Carleton Place; R. T. O'Hara, Maxville, and D. E. Demoulin, Lancaster.

As there was no further business to be brought before the association the meeting then adjourned.

A. E. JAMES, Secretary.

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## MONTANA VETERINARY MEDICAL ASSOCIATION.

Meeting held at office of Dr. M. E. Knowles, in the Capitol building, presided over by President Nash.

The president opened the meeting with a brief address commenting on the work of the association and the advancement and encouragement that the veterinary profession was receiving at the present time.

Reports of the committees:

Dr. M. E. Knowles, as chairman of the executive and legislative committee, made a brief report and called the attention of the association to the necessity of active effort on the part of the members towards the securing of helpful legislation during the ensuing session of the legislature.

Dr. M. E. Knowles offered to contribute \$20.00 towards the expense of maintaining a member of the association at Helena to look after the association's interests.

Dr. Knowles' report was accepted and a discussion of the question of legislation covering the practice of veterinary medicine was discussed by Drs. Thompson, Swank, Gardiner, and Wheeler.

The secretary-treasurer then made his reports.

Upon motion of Dr. A. D. Knowles, seconded by Dr. Thompson, the report was accepted as read.

The report of the committee on diseases was made by Dr. A. D. Knowles, chairman, who reported as follows:

As there has been a great deal of railroad construction work going on in this state for the past two years contractors have brought into the state a good many cases of glanders, which according to the State Veterinary, M. E. Knowles, will raise our figures on horses slaughtered at least fifty per cent.

To what extent tuberculosis exists in the state there is no way of determining under present conditions, but it is positively known that it does exist to some extent in dairy herds.

Infectious lip and leg ulceration in sheep occasions considerable loss during the late fall, winter and spring in the northern and eastern counties.

Loco, which exists in several counties of the state, is particularly bad in the Yellowstone valley and some of its tributaries, where the loss in live stock and the depreciation in value of grazing lands has been immense.

There was an outbreak of swamp fever in Madison county last year among the range horses and was therefore difficult to treat successfully.

Scabies exist to a limited extent among horses and cattle in the northern and eastern parts of the state, but the owners are dipping in crude oil and it is believed that it will soon be eradicated.

Montana receives each year hundreds of thousands of sheep from the west and south, but under the watchful care of our efficient State Veterinarian and his assistants disease rarely develops from such sources.

The question of the seriousness of the ravages of the sclerostoma equina and tetracanthum was also discussed by Dr. A. D. Knowles and some interesting data upon it regarding several cases which he had observed.

An interesting discussion of his paper then followed, led by Dr. M. E. Knowles and Dr. H. C. Gardiner.

At this point Dr. M. E. Knowles suggested that he would be willing to familiarize himself with the method of immunizing against swine plague or hog cholera, and would be glad to afford the members of the association an opportunity of availing themselves of this information.



It was the universal opinion of the association that all would be willing to come to a central point for instruction in this matter.

The following motion was made by Dr. M. E. Knowles and seconded by Dr. A. D. Knowles, that the secretary be instructed to address a letter to the director of Montana agricultural experiment station, stating it was the sense of the association that a veterinary who was also a pathologist should be secured at the earliest possible moment. That a veterinary department be installed at the station. This motion was adopted unanimously and was discussed by Prof. Clarke of the station, Dr. Swank and Dr. Thompson.

Eight new members were admitted to membership.

Upon motion of Dr. A. D. Knowles, seconded by Dr. Simmons, the secretary-treasurer of the association was instructed to pay the expenses of a luncheon after the meeting. The resolution passed.

The committee on resolutions of which Dr. A. D. Knowles, as chairman, offered the following resolutions, which were adopted:

Resolution No. 1.—Be it resolved, That it is the sense of this association that the office of State Veterinary should under no circumstance be regarded as a political one and that competency, training, moral standing and experience alone be the requisites upon which appointment should be made, and be it further resolved, that the secretary be instructed to transmit a copy of this resolution to the Governor-elect.

Nomination and election of officers then followed and the following were elected for the ensuing year:

President, Dr. E. D. Nash, Helena.

Vice-President, Dr. A. D. Knowles, Livingston.

Secretary and Treasurer, Dr. W. S. Swank, Miles City.

We were then favored with a number of papers. Dr. L. A. Wheeler gave a very instructive paper on the subject of the surgical relief of laryngeal hemiplegia, which was discussed at some length by Drs. M. E. Knowles and C. E. Simmons.

Dr. M. E. Knowles gave an interesting history of the efforts to secure adequate meat and milk inspection in the state of Montana. He called attention to the urgency of proper legislation at the next session of the Legislature.

The subject of meat and milk inspection was discussed at some length by a number of the members.

Upon motion of Dr. A. D. Knowles, seconded by Dr. Simmons, it was resolved that it was the sense of the association that

the individual members owe allegiance to and promise to extend their heartiest support to the work of the association committee in every manner possible.

Prof. Clarke, of the experiment station, was present at the meeting, and thanked the members in behalf of the station for their expression of good will.

It was moved by Dr. M. E. Knowles and seconded by Dr. Simmons that a committee be appointed by the president to look into the matter of the present live stock sanitary laws, and meat and milk inspection laws, and that the committee make such suggestions as they might deem advisable to the office of the State Veterinarian and to the state live stock sanitary board. The chair appointed the following committee: Dr. H. C. Gardiner, Dr. J. A. Peede, Dr. J. P. Thomson.

Dr. A. H. Cheney favored the association with an address upon the work of the association, commending highly the effort of securing for the people a sanitary meat and milk supply.

Prof. Clarke, of the station, then addressed the meeting on the subject of the Montana Horse Breeders' Association, and requested the aid and co-operation of this association.

Dr. Thomson made some very important remarks upon the value of outside effort on the part of the members of this association in the matter of securing legislative aid in its furtherance.

It was moved by Dr. H. C. Gardiner and seconded by Dr. Thomson that Prof. Clarke be made an honorary member of this association. The motion was adopted unanimously.

It was moved by Dr. M. E. Knowles, seconded by Dr. Cary, that this association extend to the Horse Breeders' Association its heartiest support and good will.

An interesting discussion of the question of the effect of automobiles and their encroachment on the work of the veterinarian was indulged in by Dr. Simmons and called forth an interesting and spirited discussion by the members.

Upon motion meeting adjourned.

W. S. SWANK, Secretary.

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## INDIANA VETERINARY ALUMNI ASSOCIATION.

The thirteenth annual meeting was called to order at Indianapolis, Ind., April 1, 1909, by President T. A. Sigler.

*President's Address.*—One year ago when I was escorted to this chair by Drs. Yount and Mueller, I promised to favor you with the president's annual address; an address in behalf of the faculty and class.

Now, this is like the man that was hauling a load of potatoes up a hill. The end gate came out of the wagon and potatoes went helter skelter down the hill. He was a terrible man to swear, and his neighbor, who happened along, said: "John, how does it come you are not swearing?" Said John: "Can't do the case justice." So with me, gentlemen; I can't do the case justice.

I assure you it affords me no little pleasure to have the honor of filling the chair the past year, an honor that I felt was more than due me.

I am glad to come back to the I. V. C., our alma mater. I look ahead to our Alumni Association like a boy coming home to mother and eating the pumpkin pies she used to make. It is here we meet our old college classmates and, in their turn, get acquainted with the new ones.

A few days ago, while attending the inauguration of President McConnell of DePaw University, they introduced a speaker as an adopted son, who had an honorary degree from that college. In my case I feel that I am not adopted but an own son of the I. V. C., and while the junior in years of many present, and I look about and see the advancement of the college, I feel as an old son. You that are graduating to-day have as much advantage over me as I had over my father in a common school education.

I was glad, on opening the REVIEW, to see that the I. V. C. is classed as A No. 1, and why not? The state of Indiana has one of the best veterinary colleges in the United States. The fastest horse the world has produced was foaled in Indiana. The state has one of the largest importing establishments in the world. Some of the finest herds of cattle are bred in this great commonwealth.

The city of Indianapolis and the state of Indiana owe much to the faculty of the I. V. C, for they have devoted time and money to conduct an institution worthy of this our great city. On the other hand, the faculty owe much credit to their graduates who have gone out in the field of practice and followed their chosen profession in an honest and upright way, and in so doing have gained the confidence of the public. Those who are out

in practice may feel that they have not done anything for the advancement of veterinary science; they may not have performed any surgical operations of world-wide repute, or made any radical discoveries in veterinary science, yet, if they have practiced their profession in an honest and upright way, they have done much to its credit. It is these men who are to-day responsible for that great army of meat inspectors who are protecting the health and lives of the people of this great republic.

The recent graduate is like the wax in the moulder's hand; you are the architect of your own future; just what you make of yourself. We each represent the entire profession in our community, and we will be credited or discredited by our success or the failure, and the profession judged accordingly; so, remember at all times, that you have been given a title to defend; you are a guardian of the public health, as well as its wealth.

To the recent graduate who goes into meat inspection it matters not what breed the animal on the butcher's block was, whether Durham or Angus. But to you who go into breeding districts you must study the different breeds of live stock, at least the most popular of them, as you will be called upon to advise about them and will quickly endear you to the buyer and breeder, and it will be a nice little source of profit also. To be a success as a professional man, you must take an active part in the various organizations in the locality in which you live; you should be able to lend assistance to the agricultural interests as well as breeding. A good veterinarian in any locality is the same as good digestion is to man.

Some one has said a physician should have the eye of an eagle, the courage of a lion, the hand of a maiden, the heart of a dove; this should apply to the veterinarian who has the profession at heart.

It is needless for me to tell you that this is the grandest profession on earth, one in which you can gain for yourself a revenue while saving your client dollars, and last, but not least, relieve the dumb sufferer.

I thank you.

A long list of new members were elected.

Election of officers:

Drs. A. F. Nelson and Edgar Heiny were placed in nomination; the ballot was spread, and Dr. Heiny received 32 and Dr. Nelson 10; Heiny elected president.

Vice-President—Dr. F. F. Jacobs.

Secretary—E. M. Bronson.

Treasurer—Dr. Guy Baird.

Censors—Drs. Muecke, McConnell and Stout.

Dr. Mueller introduced an amendment in writing to Art. 7 of the by-laws as follows:

I move to amend Art. 7 to read as follows, beginning after the word honor, except the office of Secretary, which shall carry with it a salary of ten (\$10.00) dollars, beginning April 1, 1908. All words in conflict herewith to be stricken out.

(Signed) F. A. MUELLER,  
F. A. MUECKE.

President was given a rising vote of thanks for his kindly labors for the year past. Motion to adjourn carried at 11.25 A. M.

Meeting called to order at 11.40 by President Heiny, who announced his committee on program and entertainment for the ensuing year: Drs. T. A. Sigler, of Greencastle; H. M. Hamilton, of Muncie; P. A. Bonebreak, of Cutler.

Dr. Mueller's amendment was called for and unanimously adopted as read.

Treasurer's report showed \$28.13 in the treasury April 1, 1909. Adopted.

Dr. Miller, of P. D. & Co., gave a very interesting talk on "Experimental Medicine" as carried on by his firm and the reasons for so doing. His talk was a compliment to our profession as well as instructive.

He said that "the veterinarian pays more attention to what he gives, how he gives it, and what result he gets than the average M. D." Here's hoping Dr. Miller will continue to think well of us as veterinarians and come before us often with his educative talks.

Nothing further coming before the association, with all wishing to get a lunch before coming back to the graduation exercises, a motion to adjourn was carried.

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## VERMONT VETERINARY MEDICAL ASSOCIATION.

The first regular meeting of the Vermont Veterinary Medical Association was called to order at 3.35 p. m. February 18, 1909, with the temporary officers which were elected October

15, 1908, officiating, Dr. A. H. H. Lewis, of Barre, occupying the president's chair, and Dr. F. C. Wilkinson acting as secretary.

Secretary's report, constitution and by-laws, certificates of membership as to form, material and association seal, members' report of legislative committee were each taken up in the order mentioned and disposed of.

Fifteen charter members were enrolled.

Bills to date were ordered paid as per reading.

Attorney's bill for services at Vermont Legislature, session 1908-09, was ordered to be laid on the table.

All moneys were ordered to be left in charge of the secretary-treasurer.

Certificates—Meeting ordered an assessment on the members to pay for the certificates, the secretary to notify the members when certificates are ready for distribution, the same to be sent on receipt of the price, which was fixed at four dollars (\$4) in advance.

Election of officers for 1909.

President—Dr. F. C. Wilkinson, Bellows Falls.

First Vice-President—Dr. A. H. H. Lewis, Barre.

Second Vice-President—Dr. W. H. Corey, Woodstock.

Secretary-Treasurer—Dr. F. W. Chamberlain, Burlington.

As members of the Executive Committee, the first to act as chairman, Drs. Stevenson, Prouty and Welsh.

Motion was made and carried that Hon. H. S. Wilson, Arlington, State Cattle Commissioner, be elected an honorary member of the association during his term of office.

Adjourned.

At a meeting of the executive committee directly following adjournment of the regular meeting, it was decided to hold the next meeting of the Association in Rutland, Vt., during the month of July, the date to be decided later. The secretary hopes to have a good literary programme at the July meeting.

FRANK W. CHAMBERLAIN,  
Secretary.

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## B. A. I. VETERINARY INSPECTORS' ASSOCIATION OF CHICAGO.

The regular monthly meeting of the B. A. I. Veterinary Inspectors' Association was held at the Pathological Laboratory, Forty-second and Halsted streets, Chicago, Ill., April 9.

Mr. Frank Healy, a stock examiner in the Bureau of Animal Industry, gave a demonstration on the electrical conductivity of meat, blood and urine, showing a means whereby the sense of hearing may be used in detecting unsound meats.

Dr. A. L. Faunce was appointed delegate to the A. V. M. A. meeting in Chicago next September.

It was decided that the annual banquet, which was postponed last February on account of many of the members being away working on the eradication of foot-and-mouth disease, should be given next month. Following is the banquet committee: Drs. Day, Breining, Harris, Colson and Young.

Dr. A. L. Faunce read a paper on Poorness, Emaciation and Immaturity. Drs. Holcomb, Siegmund, Paxson and Brinkamp participated in the discussion of the paper.

D. D. TIERNEY,  
Secretary Treasurer.

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THE REVIEW, in my opinion, is the best veterinary periodical ever published.—(W. A. Scott, *Veterinarian*, Columbus, Ga )

IN paying our subscription to the AMERICAN VETERINARY REVIEW we feel that we get more than our money's worth.—(C. H. Case, *Veterinarian*, Akron, Ohio.)

THE Kansas City Veterinary College held its commencement exercises on the evening of March 30th in the New Casino, which was packed to its utmost to accommodate the many friends of the graduating class who were assembled to see their efforts crowned with the granting of diplomas, and to bid them good cheer as each started upon his life work in his chosen profession. The Rev. J. L. Thompson made the Faculty address. The musical numbers were furnished by college students. Dr. Robert C. Moore, president of the college, conferred upon the members of the class, which numbered 117, the degree of Doctor of Veterinary Science.

Dr. Louis D. Ryan, Emporia, Kansas; Dr. Dale E. Sawyer, Sikeston, Mo.; Dr. Samuel L. Stewart, Coffeyville, Kansas; Dr. Earl Stribling, Earlham, Iowa, and Dr. Theodore Tsalekoff, Chicago, Ill., were granted post-graduate certificates. The exercises were closed by the presentation of flowers, books and other gifts, and the extending of congratulations by the relatives and many friends present.

TABLE INDICATING THE REQUIREMENTS OF STATE LAWS GOVERNING THE PRACTICE OF VETERINARY MEDICINE THROUGHOUT THE UNITED STATES, WITH NAMES AND ADDRESSES OF EXECUTIVE OFFICERS.

Secretaries are requested to promptly notify the REVIEW office of any changes in the law, regulations, personnel or addresses of the officers of their respective Boards.

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[illegible]

| STATE.          | Preliminary Education.                                                                            | Professional Training.                                                                 | Licensing Tests.                                                            | Registry.                                                             | Executive Officer and Address.                                                              | Administrative Board.                                         | Remarks.                                                  |
|-----------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------|
| Missouri.       | No requirements.                                                                                  | No requirements.                                                                       | Examination.                                                                | With the State Board.                                                 | D. F. Luckey, Sec., Columbia.                                                               | Veterinary Examining Board.                                   |                                                           |
| Montana.        |                                                                                                   |                                                                                        |                                                                             |                                                                       |                                                                                             |                                                               |                                                           |
| Nebraska.       | No requirements.                                                                                  | No requirements.                                                                       | Examination.                                                                | With State Board.                                                     | A. T. Peters, Lincoln.                                                                      | State Board of Vet. Examiners.                                |                                                           |
| Nevada.         |                                                                                                   |                                                                                        |                                                                             |                                                                       |                                                                                             |                                                               |                                                           |
| New Hampshire.  | No requirements.                                                                                  | No requirements.                                                                       | Exam. or grad. from a lawfully constituted school.                          | With the State Board.                                                 | R. I. Twombly, Secretary, Alton.                                                            | State Board of Veterinary Examiners.                          |                                                           |
| New Jersey.     | 21 years of age. Good moral character. Competent school education.                                | Grad. from legally incorp. school having at least three year course approved by Board. | Examination and practical tests.                                            | With the State Board and with the Clerk of the Court of Common Pleas. | Wm. Herbert Lowe, President, Paterson.                                                      | State Board of Veterinary Medical Examiners.                  | Examinations held at State House, Trenton, Jan. and June. |
| New Mexico.     |                                                                                                   |                                                                                        |                                                                             |                                                                       |                                                                                             |                                                               |                                                           |
| New York.       | Graduation from a four year secondary school course subsequent to 8 years elementary preparation. | Graduation from a registered school.                                                   | Examination.                                                                | With the Clerk of the county of practice.                             | Chas. F. Wheelock, Chief of Examinations Division N. Y. State Education Department, Albany. | Examinations Division of New York State Education Department. |                                                           |
| North Carolina. | No requirements.                                                                                  | No requirements.                                                                       | Examination.                                                                | With Sec. State B'd and Sup. Ct. of c'ty of residence.                | Tait Butler, Sec., Raleigh.                                                                 | Board of Veterinary Medical Examiners.                        |                                                           |
| North Dakota.   | No requirements.                                                                                  | Graduation from a legally authorized school.                                           | Examination.                                                                | With Board annually.                                                  | S. P. Smith, Pres., Cando.                                                                  | State Board of Veterinary Medical Examiners.                  |                                                           |
| Ohio.           | No requirements.                                                                                  | No requirements.                                                                       | Examination. Diploma from reputable school accepted in lieu of examination. | With the Secretary of the State Board.                                | David S. White, Secretary, Columbus.                                                        | Board of Veterinary Examiners.                                |                                                           |

| STATE.          | Preliminary Education.                              | Professional Training.                                            | Licensing Tests.                                    | Registry.                                                                                | Executive Officer and Address.                 | Administrative Board.                                                       | Remarks.                                      |
|-----------------|-----------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------|
| Oklahoma.       | No requirements.                                    | No requirements.                                                  | Exam. Dip. school good standing in lieu of exam.    | With the Clerk of the county or practice.                                                | William McLean, Secretary, Portland.           | State Veterinary Medical Board.                                             | License covers 4 yrs.; renewed without exam.  |
| Oregon.         | 21 years. Good moral char. Comp't school education. | Graduation from a legally incorporated school.                    | Examination.                                        | With State Board annually.                                                               | W. H. Horace Hoskins, Secretary, Philadelphia. | State Board of Veterinary Medical Examiners.                                |                                               |
| Philippines.    |                                                     |                                                                   |                                                     |                                                                                          |                                                |                                                                             |                                               |
| Porto Rico.     |                                                     | Graduation from school of good standing, or examination by Board. | Graduation or examination.                          | Present certified foreign diploma and receive corresponding degree from Univ. of Havana. |                                                | Board composed of dean of Medical Society, two vet. surg's. and two M. D's. | Law promulgated by Military Governor in 1902. |
| Rhode Island.   |                                                     |                                                                   |                                                     |                                                                                          |                                                |                                                                             |                                               |
| South Carolina. |                                                     |                                                                   |                                                     |                                                                                          |                                                |                                                                             |                                               |
| South Dakota.   |                                                     | 3 yr. requirement after 1909.                                     |                                                     |                                                                                          |                                                | State Board of Examiners.                                                   |                                               |
| Tennessee.      | Good moral character.                               | No requirements.                                                  | Examination or graduation from a recognized school. | With S. B. Board and Clerk of Court of county of resid.                                  | Geo. R. White, President, Nashville.           | State Board of Veterinary Medical Examiners.                                |                                               |
| Texas.          |                                                     |                                                                   |                                                     |                                                                                          |                                                |                                                                             |                                               |
| Utah.           |                                                     | Exam. or diploma from school recog. by the A.V. M. A.             |                                                     |                                                                                          | John Crust, Salt Lake City.                    |                                                                             |                                               |
| Vermont.        |                                                     |                                                                   |                                                     |                                                                                          |                                                |                                                                             |                                               |
| Virginia.       | No requirements.                                    | No requirements.                                                  | Examination.                                        | With Sec. of the State Board.                                                            | H. Bannister, Sec., Roanoke.                   | State Board of Vet. Med. Exam.                                              |                                               |
| Washington.     |                                                     |                                                                   |                                                     |                                                                                          |                                                |                                                                             |                                               |
| West Virginia.  |                                                     | Graduation from recognized school.                                | Examination.                                        | Board and County Clerk.                                                                  | S. B. Nelson, Secretary, Pullman.              | State Board of Vet. Med. Exam.                                              |                                               |
| Wisconsin.      |                                                     |                                                                   |                                                     |                                                                                          |                                                |                                                                             |                                               |
| Wyoming.        |                                                     |                                                                   | Examination.                                        | With Register of Deeds in county of practice.                                            | Louis P. Helm, Sec., Baraboo.                  | State Board of Veterinary Medical Examiners.                                |                                               |

## NEWS AND ITEMS.

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A FINELY appointed veterinary hospital has been opened at East Orange, N. J., by Dr. T. Earle Budd.

MINNESOTA has 129 graduate and 105 non-graduate veterinarians licensed to practice in that commonwealth.

DR. RICHARD P. LYMAN and family have returned from Kansas City, Mo., to Hartford, Connecticut, for the summer.

ABOUT 50 veterinarians took the Civil Service examination for Veterinary Inspector in the B. A. I., at Kansas City, April 13th.

THE REVIEW fills the long felt want of one who cannot get away to brush up each year.—(*C. M. Henderson (McGill University), Vancouver, B. C.*)

THE St. Joseph Veterinary College, St. Joseph, Mo., graduated 21 veterinarians this year. The commencement exercises were held March 19, 1909.

THE United States College of Veterinary Surgeons held its commencement exercises at Gonzaga Hall, Washington, D. C., on Thursday evening, April 15, 1909.

INCLOSED please find express money order for three dollars, my subscription to the REVIEW. We must have it, that's all.—(*J. A. McCrank, D.V.S., Plattsburgh, N. Y.*)

DR. G. A. REVERCOMB, for several years located at Roncerverte, W. Va., has moved to Okmulgee, Oklahoma, to engage in practice in that new and rapidly growing city.

THE Massachusetts Veterinary Association celebrated the twenty-fifth anniversary of its organization at Young's Hotel, Boston, on Wednesday evening, April 28, 1909.

F. H. ANDERSON (veterinarian) has been re-elected city treasurer of Evanston, Ind., with a plurality of 269 votes, after a hard-fought battle between the eight candidates for the office in the field.

E. F. JARREL, M. D. C., on the 17th day of March, was appointed State Veterinarian of Texas, to succeed Dr. W. H. Langley, resigned. Dr. Jarrel will establish headquarters at Ft. Worth, Texas.

DR. EMILIO LUACES, a graduate of the Kansas City Veterinary College, 1908, has been appointed Chief Veterinarian of the Experiment Station, Santiago de Las Vegas, Cuba, to succeed Dr. N. S. Mayo.

ANY veterinarian who is specially interested in sanitary work can obtain a copy of the proceedings of the Washington meeting of the Inter-State Association of Live Stock Sanitary Boards by communicating with Dr. Chas. E. Cotton, Secretary, Minneapolis, Minn.

THE first annual banquet and ball of the Veterinary Medical Association of the Colorado State Agricultural College was held at Masonic Temple, Fort Collins, Colorado, April 9, 1909. Dr. G. H. Glover filled the rôle of Toastmaster in a very acceptable manner.

THE Atlantic City Horse Show, held on one of the immense piers of that famous New Jersey seaside resort, during the second week in April, was a grand success from every viewpoint. Veterinarian Budd, who was one of the judges, reports the horse outlook as decidedly encouraging.

OWING to the change of date of the meeting of the American Veterinary Medical Association, the date of the annual meeting of the Inter-State Association of Live Stock Sanitary Boards, which also convenes in Chicago, has been changed to September 13, 14 and 15.

THE commencement exercises of the Chicago Veterinary College were held on April 6, 1909. The occasion was an enjoyable and important one, as by it the school gave birth to 107 new sons. Gold medals were awarded to five and prizes to ten competitors, and the honor list contained 29 names.

DURING the month of February, Dr. W. G. Clark, Marinette, Wis., read a paper on the relation between bovine and human tuberculosis at the farmers' short course of the Marinette County Agricultural School and also at the Menominee, Mich., Agricultural School a couple of weeks later. The Medical Society has requested Dr. Clark to present a paper at its meeting this month.

FORTY-ONE young men received their diplomas from the Indiana Veterinary College at its commencement exercises held April 1, 1909. Addresses were made by Drs. Geo. H. Roberts, Fred. A. Muller, W. B. Craig, E. O. Chattan and Helen Knable of the faculty, and Otto Wagner, assistant secretary of the college. A new building to cost \$30,000 is now in course of erection.

THE General Assembly of South Carolina has just passed an act which places that commonwealth among those states requiring the tuberculin test of cattle for breeding and dairy purposes. The new law also allows compensation for tuberculous and glandered animals. Dr. M. Ray Powers, State Veterinarian, considers that this feature will be quite an advantage in live stock sanitary work in South Carolina.

DR. W. H. DALRYMPLE, Baton Rouge, La., is looking forward with a great deal of pleasure to a trip across the ocean this summer to visit his old home and those of his relatives and friends who are left to him. He sails from New York May 29th by an Anchor Line steamer for Glasgow and will return to America in time for the meeting of the A. V. M. A. at Chicago in September. Dr. Dalrymple hopes to be able to run over to Paris this trip to see Professor Liautard.

A SPECIAL committee of the Bureau of Animal Industry, consisting of Drs. M. A. Farrington, Assistant Chief of Bureau, and R. W. Hickman, Chief of the Quarantine Division, visited the various veterinary colleges in the United States during the latter part of March and the beginning of April. They made careful inquiries into the details of matriculation, methods of instruction, qualifications of teachers and all other matters, to ascertain how completely the colleges have complied with the requirements of the B. A. I. Circular No. 133.

A BILL has passed the senate of the Minnesota legislature providing for the tuberculin testing of all pure-bred cattle sold for breeding purposes. It has also passed a measure requiring druggists and others selling either tuberculin or mallein to report each sale to the State Live Stock Sanitary Board.

The Dairy and Live Stock Committee of the Minnesota legislature now in session has reported out as a direct committee bill a measure which calls for a permanent annual appropri-

tion of \$70,000 a year for the Sanitary Board work in connection with tuberculosis and glanders. This is in addition to a permanent annual appropriation of \$19,000 general sanitary work. Special precautions are taken in this bill to prevent tampering with the tests.

**A GREAT WESTERN MEETING.**—The annual meeting of the Missouri Valley Veterinary Association will be held in Omaha June 16 and 17th. A program is presented which will be filled to repletion with good food for a mental feast. The committee on local arrangements are making an effort to arrange and plan local affairs so as to make it the most valuable meeting ever held by that association.

The meeting will be held as usual in the city hall. A business meeting will take a large part of the forenoon meeting of the first day. Papers and discussions will occupy the afternoon and the annual banquet, to which, the local committee say, "This year the ladies are invited," will be held the evening of the first day.

The forenoon of the second day will be devoted to papers, reports of cases, and discussions of same. In the afternoon there will be ample clinic to last until late. The veterinarians of Omaha and Council Bluffs have joined hands and will see to it that there will not only be an abundance, but quality, in the clinic, cases for operation, for diagnosis, and some showing results of previous operations. Some cases presented at last year's clinic will again be in evidence.

**COMMENCEMENT EXERCISES OF THE ONTARIO VETERINARY COLLEGE.**—Owing to the unavoidable absence of the Minister of Agriculture, President Falconer of the University of Toronto presided at the recent commencement exercises of the Ontario Veterinary College. Short addresses of a congratulatory nature were delivered by the chairman, Dr. Andrew Smith, former principal; Dr. Brodie, of the University of Toronto; President Falconer, and Principal E. A. A. Grange of the college. Previous to the actual closing the graduates presented the college with a picture of the professors and class.

A feature was the fact that all of the graduates were students who had returned to finish their course. Formerly the institution only gave a two-year course. When the Ontario Government took over the college in July last it was decided to have a three-year term. So these students, although they had received

their diplomas, came back to get their degree from the college as a government institution. This fact accounts also for the smallness of the class, which was composed of seventeen men, but, as in former years, they have come from all parts of the United States and Canada.

In the course of his opening address, President Falconer announced that a new degree, to be known as bachelor of veterinary science, would be established. He thought it would give prestige, as it would lead to the doctorate degree.

DR. C. H. STANGE, DEAN OF THE VETERINARY FACULTY, IOWA STATE COLLEGE.—Dr. C. H. Stange has been elected Dean of the Veterinary Faculty of the Iowa State College to succeed Dr. J. H. McNeil, resigned. For six months the president and the trustee committee of the college have been making extensive and earnest inquiry for the best man for the deanship made vacant by the resignation of Dr. McNeil. The faculty committee of the board of trustees, together with the president and Dean Curtiss, to whom the matter had been referred with power, came to the unanimous conclusion that of all available men they could make no better selection than that of Dr. Stange.

Dr. Stange was the honor student of the college the year of his graduation and has pursued graduate studies since, especially in bacteriology and histology, in the University of Chicago, and has carried the subjects of pathology, histology and theory and practice as a member of the faculty of the veterinary division of the Iowa State College. During the current college year he has largely carried the administrative responsibilities of the division. Dr. Stange has proven himself a thoroughly capable man. It is the belief of those in charge of the interests of the college that they have made a happy selection. Dr. Stange is thoroughly scientific in his training and methods and at the same time thoroughly practical. He is a man of excellent executive ability and a good judge of men, much liked by the students and his associates, and has before him a very promising future.

The veterinary division at the college now numbers 130 students. Plans have been approved by the board of trustees and are being submitted to the legislature for endorsement for the erection from the millage fund of a \$150,000 building with equipment for the veterinary division. Adequate support is being asked from the legislature that this and other departments of the college may be adequately provided for the increased demand for faculty and equipment.



While Dr. Stange is but twenty-eight years of age, it is remembered that men as young or younger than he have taken similar responsibilities and have developed with their work to positions of leadership. In this connection such men as Victor C. Vaughn, Dean of the Department of Medicine at Ann Arbor; Dean Curtiss, of Ames; Dean Bailey, of Cornell, may be mentioned as men who quite young in life have been placed under large responsibility and have made good.

NEW LEGISLATION IN PENNSYLVANIA.—The legislature of Pennsylvania adjourned April 15. Not much general legislation of veterinary sanitary importance was enacted. The few new provisions of law that were made will be discussed later.

The legislature appropriated \$614,400 for what might be termed veterinary purposes. This amount includes \$374,400 for the use of the State Livestock Sanitary Board and for salaries of officers and employees of the Veterinary Division of the Department of Agriculture; \$90,000 deficiency to pay for work done during the fiscal year which will end May 31, 1909 (including expenses incident to the outbreak of foot-and-mouth disease), and \$150,000 for the Veterinary Department of the University of Pennsylvania.

The appropriation to the State Livestock Sanitary Board embraces items for indemnity to owners of condemned animals, for the enforcement of quarantine laws, for the support of the state meat inspection service, for dairy inspection work, for the administration of the horse breeding law, for the maintenance of the laboratory and experimental farm for the investigation of the diseases of animals, etc.

The appropriation to the Veterinary School embraces an item of \$100,000 for construction and an item of \$50,000 for current expenses.

While these appropriations may appear to be small, when considered with reference to the investment of \$180,000,000 in domesticated animals in Pennsylvania that is conserved by them, and the vast importance of veterinary sanitary work and veterinary education in their relations to the agricultural and public health interests of the Commonwealth, the total is, nevertheless, such as to place a great burden of responsibility on the veterinary profession of the state.

The veterinarians of Pennsylvania have for a number of years had some opportunity to demonstrate to the public the im-

portance and the value of the work they are engaged in, and it is because they have shown the worth of their work that they are now to have a larger opportunity.

Experience justifies the expectation that the profession of the old Keystone state will rise equal to the responsibilities that are placed upon it, and the hope that at the end of the next fiscal period the benefits from the expenditures made will be so apparent that there will be no regret that they were authorized.

BANQUET IOWA STATE COLLEGE.—Two hundred and fifty veterinarians assembled for the fifth annual alumni-senior banquet of the Veterinary Medical Society of the Iowa State College, held at the Chamberlain Hotel, Des Moines, on March 12. The Veterinary Department of the college turned out as a unit, and the attendance was still further augmented by the return of many of the alumni of the institution, and goodly number of invited guests who mingled with students and faculty in the spacious hotel parlors. Here the reception committee saw to it that no man failed to meet every "old grad" and "young prep" present. It was an enthusiastic gathering of veterinarians, students and friends of the profession.

Following the elaborate seven-course dinner a program of formal and impromptu toasts was carried out. Dr. R. R. Dykstra of the veterinary faculty of the college acted as toastmaster. Hon. W. J. Dixon, president of the board of trustees of the college, spoke on "The Relation of the Board of Trustees to the Veterinary Department." His announcement of the certainty of a new \$150,000 building for the Veterinary Department in the immediate future was received with rounds of applause by the enthusiastic students. Prof. Curtiss, Dean of the Department of Agriculture of the college, spoke on "The Veterinarian's Calling." He dwelt on the great and constantly widening scope of the veterinarian's work, and on the future of men who would prepare themselves by a thorough college training for entrance into this work. His remarks were received with deep interest by all assembled. Dr. E. E. Faville, of Des Moines, spoke entertainingly on the subject, "Inside vs. Outside." Dr. N. N. Crawford spoke for the senior class on the subject of "Aims and Ames." Dr. English, of the 2d U. S. Cavalry, gave a pithy address on "The Veterinarian in the Far East." Dr. English's experience while with his regiment in the Philippines enabled him to both interest and instruct his audience with a

description of disease conditions in the Islands, and with a discussion of the methods of eradication employed in dealing with the more prevalent types. He also pictured very vividly the life of a veterinarian in the Islands by the relation of incidents and conditions encountered in actual service. Other speakers who responded when called upon were: Lieut. Gov. Clarke, Hon. G. C. White, Hon. E. M. Wentworth, Dean E. W. Stanton.

Dr. C. H. Stange, the Dean of the Veterinary Department, who has attended every banquet of the society, said that the one of this year was by long odds the most successful ever held. Originally intended as a "get together affair" for students and faculty, it has developed into an annual meeting of state-wide interest among the veterinary profession.

**SANITARY WORK IN MINNESOTA.**—A group of Minneapolis city dairymen have been fighting the Minneapolis test ordinance for a number of years and have been repeatedly defeated. This winter they attempted to accomplish their purpose by attacking the whole tuberculosis and tuberculin test work of the state and indirectly the State Live Stock Sanitary Board.

The matter was referred by the Senate Committee to its Dairy and Live Stock Committee with instructions to conduct such tests and investigate as it deemed necessary and important and report back to the senate.

The report adopted is a complete vindication for the Sanitary Board so far as its past record is concerned, besides containing some interesting comments concerning the tuberculosis question and the tuberculin test. It is as follows:

The committee to whom was referred resolution on page 5 of the Senate Journal, February 5, concerning the Live Stock Sanitary Board and the tuberculin test, beg leave to offer the following report:

There is filed with the committee a full statement giving number of animals killed on account of tuberculosis and the amount due to each owner together with name and address.

In addition is filed a copy of the minutes of the board, showing that its accumulated deficit was incurred only after a conference with and on the advice of His Excellency Governor J. A. Johnson, the Attorney-General, State Auditor and the State Treasurer's office.

As called for by the resolution the board has ceased (pending investigation) to incur any further obligations for animals affected with tuberculosis.

Concerning the tuberculin test: In response to the request of the committee, the Live Stock Sanitary Board tuberculin tested twenty-five head of cattle owned by Swift & Company, which were passed by the tuberculin test as free from tuberculosis.

The application and the entire course of the tuberculin test were carefully watched by a representative appointed by the committee.

In addition were also tuberculin tested by the board nineteen head of cattle owned by Senator B. E. Sundberg. The result of the tuberculin test showed fourteen of the nineteen animals to be affected with tuberculosis. The twenty-five cattle owned by Swift & Company and passed by the tuberculin test as free from tuberculosis and the fourteen cattle owned by Senator B. E. Sundberg, which had reacted to the tuberculin test, were killed under the supervision of the committee.

The post-mortem examination on the twenty-five non-reacting "Swift" cattle showed no evidence of tuberculosis, while the fourteen reacting cattle owned by Senator B. E. Sundberg showed well-marked lesions of tuberculosis, some of the animals being badly affected, the lungs and other organs presenting a repulsive appearance.

These results show that tuberculin is a reliable diagnostic agent.

The records of the tuberculin test of the two lots of cattle and the post-mortem of findings are submitted herewith as part of this report.

Your committee would respectfully report that it is convinced the tuberculin test is accurate and reliable when intelligently and honestly applied, and the only means in a very large majority of cases whereby tuberculous cattle may be detected. We are of the opinion that the legitimate use of the tuberculin test should be encouraged by the state.

Further, your committee find that the deficit which has accumulated is in accordance with law as we understand the term.

It is recommended that the resolution ordering the discontinuance by the board of further tuberculin and mallein tests be rescinded.

BANQUET OF THE NEW YORK-AMERICAN VETERINARY COLLEGE (Vet. Dept., N. Y. U.), held at Reisenweber's on the evening of April 14th, was one of the best that has been held in some years. The attendance for several reasons was small, but de-

ficiency in numbers was more than compensated for by the character of the addresses that were made in response to the several toasts. President Budd acted as toastmaster, and in his usual happy manner made everyone feel at home. Dr. Munn (M.D.), of the University Council, responded to the toast, "The General Alumni of New York University," and during his remarks gave some good advice to the young graduates. Dean Coates, in his toast, "The Ladies," eclipsed all previous records, which, to those who have heard him from year to year on various topics, means a great deal. It was witty and humorous. He said in part the innocent cause of all evils to mankind is woman as she stepped forth in the Garden of Eden with the apple, and compared ladies to flowers, describing their loveliness and showing the magnetic qualities of each. He told of the various kinds of women, especially of the modern girl, the dudish girl, the girl who makes a man fall in love, the kissable girl, and the one who empties a man's pocket. He presented the æsthetic wardrobe, the peculiar ideas about dress, and the effect on her nervous system. Then described the moonlight sails, the winning smiles, the hours spent on her toilet, and the verses she would write for the object of her dreams, how sleep deserted her and when food had no attraction. Prof. Robertson, on "The Faculty," spoke very feelingly and his remarks were enjoyed by all present. Prof. Tompkins, of the Law School, after one or two amusing stories, departed from his usual lighter vein and gave some excellent advice to the young men, in which he advised that men of the veterinary profession should "get into politics." He explained by that, that he did not mean "run for office," but to avail themselves of their citizenship in the affairs of their local government, and to live in a manner befitting the best citizens in the community. He was followed by the Hon. Raymond A. Pearson, Commissioner of Agriculture of the State of New York, whose talk on "The State Department of Agriculture and the Veterinarian" was a rare treat. The Commissioner, in his interesting manner, imparted much information on the subject nearest his heart, agriculture, pointing out the fact that agriculture was the foundation of everything in our country, that the live stock industry was an essential to agriculture, and that veterinarians were essential to the live stock industry. He referred to the work being done for the suppression and eradication of tuberculosis, and some of its drawbacks, which his department hope to overcome by suitable measures, some of which are now before the present legislature.

Dr. Hollingworth, responding to the toast, "The Veterinarian a Public Benefactor," certainly justified the subject in his remarks, showing the very many ways in which the veterinarian may fill that rôle. Dr. Gill responded to a toast on "The Future" by addressing the graduating class on what use to make of *their* future. Dr. Winchester left to catch a train before opportunity had been afforded the toastmaster to call upon him, but Drs. Howard and Hoskins responded in their usual excellent form; after which various members of the graduating and recent classes spoke. This was the thirtieth annual dinner of the Alumni Association that Dr. Hoskins had attended without a break. Dr. DeVine stated that on hearing Dr. Hoskins mention the fact that he had not missed a single dinner, on the occasion of *his first* dinner, in 1898, he made a resolution, to make a similar record for himself, and has not missed attending one of the functions during the eleven years since that time. He expressed regret that the other forty-five members of his class had not done likewise.

The toastmaster called for a standing toast to our "Past Dean," Prof. Liautard, and when the gentlemen had resumed their seats a member of the Alumni Association called for a standing toast to our "New Dean," Prof. Coates.

OPTIMISM BY DR. HOLLINGWORTH AT THE ITHACA BANQUET.—It is needless for me to say that I am very glad to be here this evening at your annual banquet, even if I did have to encircle the globe to get here. I see by the program that I am to respond to the toast "Optimism," which means the doctrine that everything happens for the best. Now, it is a question whether a veterinarian can call himself an optimist when he takes into consideration the horseless vehicles that are so popular at present. I know very often I feel very pessimistic, but to be serious in regard to the automobile, I am of the opinion that the coming of this method of conveyance has caused a new idea of thought or stimulated an old one, and that is—sanitary or preventive medicine, not only with the practicing veterinarian, but with the veterinary colleges.

I believe there is a great field to be developed. The health and wealth of our country demand it. What better record can a community have than a low death rate? How is that brought about but through the energy of its health department? Now, here is just where we can look on the bright side. The veterina-

rian, by being proficient along these lines, will be able to check the causes of death in the human race due to diseased meat and polluted milk, and by so doing he is naturally going to be a public benefactor and will receive the recognition due him.

Take the wealth of our country in regard to live stock. It runs up into the billions, and here again the veterinarian will be in a position to save this country untold amount of money by his knowledge in diagnosing the contagious and infectious diseases which our domestic animals are subject to. I believe there will be laws placed on the statute books in the near future which will create offices for veterinary sanitarians, in fact, the Commissioner of Agriculture as much as said so in regard to meat and milk inspection, which is likely to be agitated in Albany, and I want to tell you, gentlemen, that, when Governor Hughes appointed R. A. Pearson commissioner, it was one of the best things that ever happened to the veterinary profession in this state. I know we have a friend. I heard him say that his wish was to have an efficient veterinary service in his department. Is not that the bright side?

But this cannot be accomplished without we veterinarians live up to the principles of honesty. Be honest in all your convictions, whether it is your client, friend or enemy, when an opinion is required. Do not always look for that almighty dollar. Do not become obligated to anyone. Do not get into the clutches of anyone. When your honor is lost you might as well give up. The person who bought you will at the opportune time, if you do not decide according to his thinking, make it very unpleasant for you. Whatever you get, get it honestly and pay likewise.

Work for the interests of your client, whether it be an individual, corporation, municipality or state. By so doing, you cannot but be looked upon as an honored citizen and an honor to the veterinary profession, which many of you are about to take up for a livelihood. Get the confidence of the public so that when you make an assertion or sign a document, they can rely on its virtue.

A man's good will is better than his enmity. Do as much for the poor man as you would for your rich client. It is no disgrace to be poor, but very inconvenient. Do unto others as you would like them to do unto you. Keep yourself under self-control. Cultivate your disposition. Knowing your weakness, remedy it. By all means, be a gentleman. Remember temptation is the root of all evil.

There is one place where optimism should reign supreme and that is in your home. If you feel the reverse when you place your foot on your threshold, cast it to the winds. We are only here a short time—born to-day, somewhere else to-morrow. Life is too short to encourage pessimism. You want to remember that when that woman decided to cast her lot and become your helpmeet it was your duty to see to it that she had all the conveniences, encouragement and kindness that you can afford, and, to my way of thinking, if such is not carried into effect, that man is a most miserable man.

You want to do as near right as you can and you want to do as near right as you know how and to continue so to the end, and when the end comes, if you are censured, it will be no fault of yours. Now, in closing, I want to say that you must remember that here in Ithaca is located the New York State Veterinary College, and it is up to the alumni of this college to put their shoulders to the wheel and to use all honest efforts to help the director of this school to make it *the* veterinary college of this continent. I am not an alumnus of it, but I am a convert. I have come to the conclusion that an institution of this kind needs more money to carry out its plans than that derived from its students. Now, gentlemen, if these few words are put into effect, I think you will be a success.

**SURVIVAL OF THE FITTEST.**—Only one oyster embryo out of every 5,000,000 produced grows up through all the successive stages of youth to the adult state. Even in animals which produce a small number of young there is great destruction, and taking all the individuals into consideration, only a single pair of young arrive at maturity to replace their parents. There is no exception to the rule that every organic being naturally multiplies at so high a rate that if not destroyed the progeny of a single pair would soon cover the earth. The elephant is reckoned the slowest breeder of known animals; it commences to breed at thirty years of age, dies at 100, and has six young ones in the interval. After 750 years, supposing all the offspring of a single pair fulfilled the rule and were not destroyed in an untimely way, there would be nearly 19,000,000 elephants alive descended from the first pair.—(*Sir Ray Lankester in the London Telegraph.*)



## VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

| Name of Organization.               | Date of Next Meeting. | Place of Meeting. | Name and Address Secretary.      |
|-------------------------------------|-----------------------|-------------------|----------------------------------|
| American V. M. Ass'n.....           | Sept. 7-10, 1909.     | Chicago.....      | R. P. Lyman, Hartford, Conn.     |
| Vet. Med. Ass'n of N. J.....        | July 14-15, 1909.     | Atlantic City.    | W. Herbert Lowe, Paterson.       |
| Connecticut V. M. Ass'n.....        | .....                 | New Haven .....   | B. K. Dow, Willimantic.          |
| New York S. V. M. Soc'y.....        | Sept., 1909 .....     | Ithaca .....      | J. F. De Vine, Goshen.           |
| Schuylkill Valley V. M. A.....      | June 16, 1909.....    | Reading .....     | W. G. Huyett, Wernersville.      |
| Passaic Co. V. M. Ass'n.....        | Call of Chair.....    | Paterson, N. J.   | H. K. Berry, Paterson, N. J.     |
| Texas V. M. Ass'n.....              | Call Exec. Com.       | .....             | R. P. Marsteller, College Sta.   |
| Massachusetts Vet. Ass'n.....       | Monthly.....          | Boston.....       | Wm. T. White, Newtonville.       |
| Maine Vet. Med. Ass'n.....          | .....                 | Bangor .....      | A. Joly, Waterville.             |
| Central Canada V. Ass'n.....        | .....                 | Ottawa .....      | A. E. James, Ottawa.             |
| Michigan State V. M. Ass'n.....     | Jan. 25-26, 1910.     | Saginaw .....     | Judson Black, Richmond.          |
| Alumni Ass'n, N. Y.-A. V. C.....    | .....                 | 141 W. 54th St.   | L. L. Glynn, N. Y. City.         |
| Illinois State V. M. Ass'n.....     | July 13, 1909.....    | Bloomington..     | J. H. Crawford, Harvard.         |
| Wisconsin Soc. Vet. Grad.....       | .....                 | .....             | S. Beattie, Madison.             |
| Illinois V. M. and Surg. A.....     | Jan. and Aug.....     | Louisville.....   | W. A. Swain, Mt. Pulaski.        |
| Vet. Ass'n of Manitoba.....         | Not stated.....       | Winnipeg.....     | F. Torrance, Winnipeg.           |
| North Carolina V. M. Ass'n.....     | .....                 | Raleigh .....     | Adam Fisher, Charlotte.          |
| Ontario Vet. Ass'n.....             | .....                 | .....             | C. H. Sweetapple, Toronto.       |
| V. M. Ass'n, New York City.....     | 1st Wed. ea. mo.      | 141 W. 54th St.   | W. Reid Blair, N. Y. City.       |
| Ohio State V. M. Ass'n.....         | .....                 | Columbus.....     | Sidney D. Myers, Wilmington      |
| Western Penn. V. M. Ass'n.....      | 1st Wed. ea. mo.      | Pittsburgh.....   | F. Weitzell, Allegheny.          |
| Missouri Vet. Med. Ass'n.....       | .....                 | St. Joseph.....   | F. F. Brown, Kansas City.        |
| Genesee Valley V. M. Ass'n.....     | .....                 | Rochester.....    | J. H. Taylor, Henrietta.         |
| Iowa Veterinary Ass'n.....          | .....                 | Ft. Dodge.....    | H. C. Simpson, Denison.          |
| Minnesota State V. M. Ass'n.....    | July 14-15 .....      | Stillwater .....  | G. Ed. Leech, Winona.            |
| Pennsylvania State V. M. A.....     | .....                 | Philadelphia..    | F. H. Schneider, Philadelphia.   |
| Keystone V. M. Ass'n.....           | Monthly.....          | Philadelphia..    | S. Lockett, Glenolden.           |
| Colorado State V. M. Ass'n.....     | June, 1909.....       | Denver .....      | M. J. Woodliffe, Denver.         |
| Missouri Valley V. Ass'n.....       | June 16-17, 1909.     | Omaha.....        | B. F. Kaupp, Fort Collins, Colo. |
| Rhode Island V. M. Ass'n.....       | Jan. and June.....    | Providence .....  | T. E. Robinson, Westerly.        |
| North Dakota V. M. Ass'n.....       | Call of Sec'y.....    | Fargo .....       | C. H. Martin, Valley City.       |
| California State V. M. Ass'n.....   | .....                 | San Francisco.    | J. J. Hogarty, Oakland.          |
| Southern Auxiliary of California    | .....                 | .....             | .....                            |
| State V. M. Ass'n.....              | Jan. Apl. Jy. Oct.    | Los Angeles..     | J. A. Edmonds, Los Angeles.      |
| South Dakota V. M. A.....           | 2d Tues. in Jy. '09   | Sioux Falls..     | J. A. Graham, Sioux Falls.       |
| Nebraska V. M. Ass'n.....           | .....                 | Grand Island.     | H. Jensen, Weeping Water.        |
| Kansas State V. M. Ass'n.....       | .....                 | Topeka .....      | B. Rogers, Manhattan.            |
| Ass'n Médecale Veterinaire Fran-    | 1st and 3d Thur.      | Lec. Room, La-    | .....                            |
| çaise "Laval" .....                 | of each month         | val Un'y, Mon.    | .....                            |
| Province of Quebec V. M. A.....     | .....                 | Mon. and Que.     | J. P. A. Houde, Montreal.        |
| Kentucky V. M. Ass'n.....           | .....                 | Not decided ..    | Gustave Boyer, Rigand, P. Q.     |
| Washington State Col. V. M. A.....  | 1st & 3d Fri. Eve.    | Pullman.....      | D. A. Piatt, Lexington.          |
| Indiana Veterinary Association...   | January, 1910 ..      | Indianapolis..    | R. G. McAlister, Pullman.        |
| Louisiana State V. M. Ass'n.....    | .....                 | .....             | E. M. Bronson, Indianapolis.     |
| Twin City V. M. Ass'n.....          | 2d Thu. ea. mo.       | St. P.-Minneap    | E. P. Flower, Baton Rouge.       |
| Hamilton Co. (Ohio) V. A.....       | .....                 | .....             | S. H. Ward, St. Paul, Minn.      |
| Mississippi State V. M. Ass'n.....  | .....                 | .....             | Louis P. Cook, Cincinnati.       |
| Georgia State V. M. A.....          | Nov. 16-17, 1909.     | Athens.....       | J. C. Robert, Agricultural Col.  |
| Soc. Vet. Alumni Univ. Penn.....    | June, 1909.....       | Philadelphia..    | P. F. Bahnsen, Americus.         |
| Virginia State V. M. Ass'n.....     | July 9, 1909.....     | Hampton .....     | B. T. Woodward, Wash'n, D. C.    |
| Oklahoma V. M. Ass'n.....           | .....                 | .....             | W. G. Chrisman, Charlo'sville.   |
| Veterinary Practitioners' Club..... | Monthly.....          | Jersey City ..    | W. H. Martin, El Reno.           |
| Vet. Ass'n Dist. of Columbia.....   | 3d Wed. ea. mo..      | 514—9th St.,      | A. F. Mount, Jersey City.        |
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| B. A. I. Vet. In. A., Chicago.....  | 2d Fri. ea. mo...     | Chicago.....      | M. Page Smith, Wash., D. C.      |
| Arkansas Veterinary Ass'n.....      | .....                 | .....             | D. D. Tierney, Chicago, Ill.     |
| York Co. (Pa.) V. M. A.....         | .....                 | York, Pa.....     | Horace E. Rice, Little Rock.     |
| Philippine V. M. A.....             | .....                 | .....             | E. S. Bausticker, York, Pa.      |
| Montana State V. M. A.....          | .....                 | Helena.....       | Chas. G. Thomson, Manila.        |
| Veterinary Ass'n of Alberta.....    | .....                 | .....             | W. H. Swank, Miles City.         |
| .....                               | .....                 | .....             | C. H. H. Sweetapple, For.        |
| Chicago Veterinary Society.....     | 2d Tues. ea. mo.      | Chicago .....     | Saskatchewan, Alta., Can.        |
| Maryland State Vet. Society.....    | .....                 | Baltimore.....    | J. M. Parks, Chicago.            |
| St. Louis Soc. of Vet. Inspectors.  | 1st Wed. fol. the     | .....             | H. H. Counselman, Sec'y.         |
| .....                               | 2d Sun. ea. mo.       | St. Louis.....    | .....                            |
| Washington State V. M. A.....       | July .....            | Seattle .....     | Wm. T. Conway, St. Louis, Mo.    |
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THE ART OF CAPSULATING is the title of a little booklet published by H. PLANTEN & SON, Brooklyn, N. Y., and is a very interesting little brochure indeed. It begins with the invention of gelatine capsules in 1833 by Mr. A. Mothes, a French pharmacist. They were known to the medical profession for many years as "CAPSULES GELATINEUSES DE MOTHES." Official notice of this important discovery appears in two reports to the "*Academie Royale de Medicine*," one of May 13, 1834, and the other of February 28, 1837. Notices and descriptions of the process of making them appeared also in many French journals of pharmacology, dictionaries, etc., up to 1866. "*The German Pharmacopoeia*," in the last edition, describes and gives formulas for making gelatine capsules, while, strange to say, the "*United States Pharmacopoeia*" entirely ignores the industry, and text books on pharmacy have little to say on it. "*Remington's Practice of Pharmacy*," 1894, describes the process used many years ago, but does not seem to be in possession of knowledge of the modern methods and machinery used. The "*American Journal of Pharmacy*" gives a condensed translation from "*Traite de Pharmacologie*"; but if one would become familiar with this industry in America, as founded by Mr. H. Planten, a Hollander by birth, in 1836, who had studied the different methods of the industry as used in France, let them write to the firm of H. Planten & Son, 93 Henry street, Brooklyn, N. Y., mentioning the AMERICAN VETERINARY REVIEW, and they will be presented with the little brochure referred to, "THE ART OF CAPSULATING."

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| 121 | Atropine Sulphate.....                                                                                                              | 1-2 gr.                | 15                         |
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| 103 | Cocaine Muriate.....                                                                                                                | 1 gr.                  | 30                         |
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| 106 | Eserine Compound.....                                                                                                               |                        | 1 00                       |
|     | { Eserine Salicylate.....                                                                                                           | 1-4 gr. }              |                            |
|     | { Pilocarpine Muriate.....                                                                                                          | 1-2 gr. }              |                            |
|     | { Strychnine.....                                                                                                                   | 1-8 gr. }              |                            |
| 153 | Eserine and Pilocarpine.....                                                                                                        |                        | 1 25                       |
|     | { Eserine.....                                                                                                                      | 1-2 gr. }              |                            |
|     | { Pilocarpine.....                                                                                                                  | 1 gr. }                |                            |
| 154 | Colic (Forbes).....                                                                                                                 |                        | 2 20                       |
|     | { Eserine Salicylate.....                                                                                                           | 1 gr. }                |                            |
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| 146 | Hyoscyamine Sulphate, Crystals.....                                                                                                 | 1-4 gr.                | 1 30                       |
| 108 | Morphine Sulphate.....                                                                                                              | 1 gr.                  | 30                         |
| 136 | Morphine Sulphate.....                                                                                                              | 1 $\frac{1}{2}$ grs.   | 30                         |
| 137 | Morphine Sulphate.....                                                                                                              | 2 gr.                  | 35                         |
| 138 | Morphine Sulphate.....                                                                                                              | 2 $\frac{1}{2}$ grs.   | 45                         |
| 155 | Morphine Sulphate.....                                                                                                              | 3 grs.                 | 50                         |
| 109 | Morphine and Atropine.....                                                                                                          |                        | 45                         |
|     | { Morphine Sulph.....                                                                                                               | 1 $\frac{1}{2}$ grs. } |                            |
|     | { Atropine Sulph.....                                                                                                               | $\frac{1}{4}$ gr. }    |                            |
| 139 | Morphine and Atropine.....                                                                                                          |                        | 45                         |
|     | { Morphine Sulph.....                                                                                                               | 1 $\frac{1}{2}$ grs. } |                            |
|     | { Atropine Sulph.....                                                                                                               | $\frac{1}{4}$ gr. }    |                            |
| 140 | Morphine and Atropine.....                                                                                                          |                        | 50                         |
|     | { Morphine Sulph.....                                                                                                               | 2 grs. }               |                            |
|     | { Atropine Sulph.....                                                                                                               | 1-4 gr. }              |                            |
| 141 | Morphine and Atropine.....                                                                                                          |                        | 60                         |
|     | { Morphine Sulph.....                                                                                                               | 2 $\frac{1}{2}$ grs. } |                            |
|     | { Atropine Sulph.....                                                                                                               | 1-4 gr. }              |                            |
| 142 | Nitroglycerine.....                                                                                                                 | 1-10 gr.               | 12                         |
| 143 | Nitroglycerine.....                                                                                                                 | 1-5 gr.                | 16                         |
| 110 | Pilocarpine Muriate, Crystals.....                                                                                                  | 1-2 gr.                | 50                         |
| 144 | Pilocarpine Muriate, Crystals.....                                                                                                  | 1 gr.                  | 90                         |
| 145 | Pilocarpine Muriate, Crystals.....                                                                                                  | 1 $\frac{1}{2}$ grs.   | 1 10                       |
| 111 | Sodium Arsenite.....                                                                                                                | 1 gr.                  | 12                         |
| 112 | Strychnine Sulphate.....                                                                                                            | 1-4 gr.                | 10                         |
| 147 | Strychnine Sulphate.....                                                                                                            | 1-2 gr.                | 11                         |
| 148 | Strychnine Sulphate.....                                                                                                            | 1 gr.                  | 12                         |
| 149 | Veratrine Muriate.....                                                                                                              | 1-4 gr.                | 12                         |
| 150 | Veratrine Muriate.....                                                                                                              | 1-2 gr.                | 12                         |

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# AMERICAN VETERINARY REVIEW.

JUNE, 1909.

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## EDITORIAL.

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### EUROPEAN CHRONICLES.

PARIS, April 15, 1909.

OCULO AND CUTANEOUS TUBERCULIN TESTS.—I would scarcely entertain our readers any more on the various new tests of tuberculin, and yet must they not know of the appreciation which exists among practitioners besides those that I have alluded to already? After all, it is most likely that only from the results recorded by those who have made special experiments that the value and the indications of cutaneous or ocular tests will be accepted and will enter into common practice. On this account, let us examine what some German writers have said in the *Berliner Tierärztliche Wochenschrift*.

A Doctor Reinecke has made minute study of the question, reviewed all that has been done, criticises it, and after examining the works carried out by most French observers, he says: That with Prof. Eber he has experimented the different methods of tuberculation, either by the cutaneous or the ophthalmic reaction method, and that out of 25 animals tested by the dermo-reaction, one only gave him a slight reaction and that at autopsy no lesion could be found. In the 24 others two had lesions, although among them six had also reacted to sub-cutaneous injection of tuberculin. With the ocular test five animals were used, three gave a slight reaction, two had lesions, two which had not reacted had no lesion, and the last neither, although he

had reacted to the instillation in the eye. The conclusions are: It is doubtful if the cuti or the oculo-reaction can give as good results as those obtained with the sub-cutaneous injection.

Another experimentator, Doctor Wolfel, has also made extensive tests. In one upon 57 animals and in another upon 13 cows clinically tuberculous and on three suspected steers. For those, he used the ocular tests, the animals having also received a sub-cutaneous injection of tuberculin. The following are the conclusions arrived at:

1st. All the animals that react with the sub-cutaneous injection of tuberculin do not, however, always give a positive reaction.

2d. The subcutaneous injections made before the installation in the eye, does not interfere with the results in any way.

3d. Reaction is better noticed between the 12th and 18th hour after the instillation.

4th. It is not accompanied with any hyperthemia.

Conclusions: The operation has no great practical value.

And yet in the *Deuts. Tierarz. Woch.*, Garth, Kranich and Grunert admit that the oculo-reaction is a sure means of diagnosis, simpler and quicker than tuberculinization; while the cuti-reaction seemed much more uncertain and for them has no diagnostic value. In the *Monatsch. für Praktische Thier.*, Klemmer and Kiessig consider the ophthalmic-conjunctivo reactions as a precious method.

And as long as I am writing on tuberculin test, let me mention the one which I just find in the *Presse Medicale*, the *Rhino-reaction*, although it will not be practical for veterinarians, but that the authors recommend as superior to the oculo-test, because of its harmless effects. It consists in a reaction with peculiar constant characters manifested by an exudate, which forms and dries up upon the congested mucous membrane of the nose as a small yellowish crust, which drops after a while or can be removed with forceps. The method of application is very simple. A small billet of wadding is dipped in a solu-

tion of tuberculin, 1 per cent., and applied on the nasal mucous membrane where it must remain for ten minutes. This is sufficient to obtain the reaction, which begins between 18 and 48 hours after and lasts for several days. The authors have tested the method in 100 cases and have obtained excellent results.

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SUB-CUTANEOUS AND INTRA-DERMO TESTS.—This general apparent diversity of opinions of the preceding experimentators as to the value of the various tuberculin tests in question, reminds me of the similar appreciation given by other experimentators. And it seems as if all the new methods of tuberculosis diagnosis with tuberculin, such as the ophthalmo, the cuti, the dermo reactions, while they may sometimes be resorted to and perhaps give indications as to the condition of the animal and upon which one could depend, they, however, cannot enter into the general practice except in some special given circumstances.

An exception, nevertheless, to this may be made in favor of the most recent application, that of the intra-dermal injection patronized by Prof. Moussu. The experiments made with it have been gathered and they form to-day a very imposing representation of successful tests. The results are said to be *CONSTANT*, and besides the general advantages of being applicable to all other species of animals, the porcine, for instance, it is strictly *specific* to tuberculosis. With non-tuberculous animals or in those that are affected with other diseases the result is always negative.

Even Prof. Vallee, who at first seemed to be unwilling to accord to it a better appreciation than the one which he accepted for the other tests, is to-day acknowledging it as the *test of choice*, superior to any other methods of "local reaction." With Vallee it has given a special immediate manifestation on the spot of inoculation, whose importance seems to be of some value, although not present in every case, finally it is to be recom-

mended in all doubtful instances, and if the results should be doubtful, a confirmation should be looked for with the subcutaneous injection, which is always (and principally with animals recently purchased), the best method, especially if the injection of a double dose of tuberculin is used, when fraud is suspected and with taking the records of the temperature from the 12th hour.

Resorting to these methods appear to be the answer to the good editor of the *Semaine Veterinaire*, who put the question as to what conduct should be followed by the testing veterinarian, so as to avoid all kind of blame or difficulties in cases of discussion occurring before a court in law suits.

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OCCULT TUBERCULOSIS.—In last month's chronicle, speaking of the anatomical characters of the tuberculosis infection, I recorded the statement of Prof. Arloing: "Tuberculous infection does not necessarily impose the apparition or the presence of macroscopic lesions." Again, in a more recent publication, the learned gentleman referred to the fact that positive reactions of tuberculin may perfectly take place with manifest or concealed tuberculous infection. Thus alluding to the observations made by him in the many years of his researches on tuberculosis.

Lately in the *Recueil de Medecine Veterinaire*, Vallee has written an article on "Occult Tuberculosis," confirmation and explanatory of the allusions I just made above. Let me resume it.

The attention of veterinarians and specially of meat inspectors must be called to the fact that the invasion of the glandular tissue, in animals as well as in man, whether in natural or experimental conditions, *does not always give rise to the rapid realization of manifest macroscopic lesions* and that a transitory condition of the bacillar infection may last for a varied length of time, sometimes very long. This condition that Germans call *latent* tuberculosis, Vallee names it *occult*. It refers evi-

dently also to the *concealed* lesions of Arloing. These forms of tuberculosis are not a new discovery. Mentioned since 1880 by investigating human physicians, it was shown by their researches that there exists in man an occult glandular tuberculosis, which is not revealed by microscopic examination nor histological control, but is only made manifest by inoculation to the guinea pigs. Of course, veterinarians became interested and Orth, Arloing, Lignieres, Vallee, Joest and his assistants Noack and Liebrecht, etc., brought out proofs that in various circumstances thoracic and abdominal lymphatic glands apparently healthy, but taken from animals which had reacted to tuberculin, did not present any apparent lesions of tuberculosis. And in many instances by inoculation to guinea pigs it was demonstrated that these organs were virulent although they appeared macroscopically healthy. An important confirmation of Arloing's words: "The means of experimental diagnosis reveal the bacillar infection rather than the presence of tuberculous lesions." And this probably could explain the pretended failures of tuberculin. "It is then allowed to comprehend the disagreeing records, more apparent than real, that are exhibited between the experimental diagnosis and the post-mortem one."

Prof. Vallee concludes his article in recommending the systematic research of occult tuberculosis, specially to sanitary inspectors. He gives some indications which are doubtful in their results. Finally, he ends in saying that many cannot be suspected nor discovered except by inoculation to guinea pigs. A process that one cannot think of resorting to very commonly.

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CHICAGO STOCK YARDS AND VETERINARY INSPECTION.—I do not know exactly what may have been the immediate results of the campaign carried on some time ago against the stock-yards of Chicago and about the Sanitary Veterinary Service in the United States. What was said and written against them must, however, have brought some changes and probably im-

provements. To appreciate those, a visit to the Stock Yards would impose itself. And it is just what a "Special Sanitary Commissioner of the *Lancet*" has done.

In the *Veterinary Record* of April 3, under the heading of "Chicago Stock Yards Revisited," the gentleman gives a concise appreciation of what he has seen and brings out points which, I think, for the respect and dignity to the profession, sanitary veterinarians referred to, ought to be acquainted with.

The article of the Special Sanitary Commissioner of the *Lancet* treats of three points which I take the liberty to reproduce.

1st. THE INCREASED NUMBER OF INSPECTORS. He says: "To analyze the new laws that have been enacted in response to the agitation against the Chicago Stock Yards would take much time and space. I am anxious to record my personal impressions on revisiting the Stock Yards now that better laws exist, and improvements have been effected. But laws are not of much use unless there is an effective machine for putting them into force. At the commencement of the year 1906 it was publicly stated that the Federal Government of the United States employed in the packing houses of the entire country a total of 411 inspectors, and it was then calculated that if these inspectors were on duty for eight hours during 300 days in the year they would have to examine 105 animals per hour. Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, last October very courteously wrote to me, saying:

" 'I shall take pleasure in giving you the following figures concerning the Federal meat inspection. This inspection is conducted at 338 establishments at which animals are slaughtered. The total force employed numbers 2,290, of whom 702 are veterinarians. The force at Chicago numbers 344, of which 108 are veterinarians. These figures do not include clerks.' "

Having thus established the statistics of the force, the *Lancet* Commissioner passes to the second point: HOW VETERINARY SURGEONS ARE MADE UP TO "SPEED THE PACE."

"This simple statement of fact is eloquent and shows that much has been accomplished in a short time. Nevertheless, and in spite the increase of the staff I could not but feel scandalized when I saw the manner in which the veterinarians and inspectors were made to work. The dignity of a scientific profession is entirely sacrificed to the necessity or imagined necessity, for speed, and it is difficult to do good professional work under completely faulty condition. Highly qualified men of science are made to hustle along in semi-darkness through filth and slush, ever 'speeding the space,' the victims of a spirit of rush by which some efficiency must be lost. The giant engine is concealed in the darkness below, ever churning and churning, turning hundreds of flywheels, transmitting its power to thousands of little wheels on which animals both dead and alive are suspended and move forward among the butchers, the dressers and the skinners. While these animals, as they travel along, are being killed, flayed and cut open, the veterinary surgeon follows and inspects. So that this inspection shall not occasion any delay, the labor is subdivided. The glands of the neck are hastily felt as the animal passes the first inspector; the viscera as they are cut out glide down a slope in front of a second inspector; and, finally, the carcass is looked into after the viscera have been removed as it passes the third inspector. The viscera of pigs have to be examined with such rapidity that a relief veterinarian stands behind the inspector to help him in case of exhaustion and delay \* \* \*."

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The third point is a call to the WANT OF DIGNITY IN THE PROFESSION. In this part of his article the Special Sanitary Commissioner of the *Lancet* first hesitates in making comparison

with this slave work thus performed by the veterinary inspectors, but he cannot help thinking of picturing it to something of the slavery work described in "Uncle Tom's Cabin" and then he goes on, not without right:

"These (the slaves) could not help themselves. But surely "such is not the case with members of a learned profession "who have the honor of representing as government functionaries the wealthy United States of America. It is high time "the veterinary surgeons in the employ of the United States "Government should insist on being treated with due consideration, should refuse to be hurried in the way that they now "are or to do their work in dark, crowded, unclean places. They "should insist on having all the leisure necessary to pause and "to deliberate over any doubt that may arise in their minds, "instead of having, as at present, to keep pace with a machine. "Also, how can science progress if a scientific man is, by the "subdivision of labor, kept all the year round doing exactly "the same detail of post-mortem examination. Veterinary inspection, as I saw it, clearly serves useful purposes, but it can "only be really efficient by altering the conditions of work."

And then he continues: "On the killing floor for large animals, the veterinary surgeon has to walk up and down examining the viscera. On one killing floor this meant, I was assured, that on ordinary days the inspector, in going backwards "and forwards, walked from seven to eight miles and when "there was a great rush of work he might have to walk some "ten miles. \* \* \* "

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After reading the above paragraphs, one may ask what is the object of publishing these in the REVIEW? The object is to ask if, leaving aside all possible exaggeration to which a writer may sometimes allow himself, almost unwillingly to fall in, the report does not contain many inadmissible facts.

It is certain that the Special Commissioner has had no intention to denigrate nor do any injustice to the gentlemen em-



ployed in the veterinary inspection service of the United States. We may accept that he has recorded just what he has seen, as he says. But the *Lancet* is the great medical paper of *England*, the *Veterinary Record* is one of the most read in our professional world, and certainly the article will be read by many.

Does not a rebuttal impose itself? I do not ask it in reference to the part which speaks of the work relating to the slaughtering proper nor how it is carried out; but is it not necessary, is it not due to the inspectors alluded to, to the profession of America and to its good reputation throughout the world!

The condition of this service of inspection must be thoroughly known and made clear. We have no doubt that Chief Melvin will show to the medical and the veterinary profession that this railroading way of making an inspection is unknown in the United States and that the sanitary inspectors under him know as well as any one, what is consistent and proper with the dignity of their profession, which, should the statement published in the *Lancet* be correct, would on the contrary be lower than one could ever dream to see it. Let Chief Melvin answer the Special Sanitary Commissioner.

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ENGLISH TUBERCULOSIS COMMISSION.—Our English contemporaries are giving now extracts of the third report of the Royal Commission on Tuberculosis. Among the conclusions I find the following: "Tuberculosis of the udder is relatively frequent in cows; and in this case the milk contains bacilli and is dangerous for people to use. A question remains to solve, what danger was presented by milk taken from tuberculous cows, which had no lesions in the udder. Many observations were made and experiments carried out. Two conditions had to be examined separately. Cases where the disease was manifested by cough and loss of appetite and those where tuberculosis was not detected by the injection of tuberculin."

"None of the cows examined, presented mammary tuberculosis, which was not noticeable clinically and in all, the udder

was carefully examined after killing. Lesions were never found, except in one case where in one quarter four small nodules which could not have been detected by clinical examination. It was established that the milk of tuberculous cows contain bacilli, whether it was obtained by the ordinary milking or extracted with aseptic instruments. The presence of bacilli in the milk of cows *clinically* tuberculous confirms the opinion expressed in the second report of the Commission that the milk of these animals must be considered as dangerous."

"The experiments carried out in relation with the infectious condition of fæces of tuberculous cows were suggested by the observations, that milk is often soiled by very various impurities and very often by excrementitious matters when it is offered to the consumer. Cows affected with open tuberculosis, cough out large quantities of bacilli and some of those may drop in the milk. But the experiments show that cows affected with pulmonary or intestinal tuberculosis are much more dangerous by their excrements than by their discharge from the nose or their expectorations. Cows that have only small lesions throw out but few bacilli by the intestines, but in animals clinically tuberculous the fæces contain enormous quantities of living and virulent bacilli."

"The presence of tuberculous with healthy cows in the same barn is peculiarly dangerous as fæces containing bacilli may soil the milk of both classes of animals."

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VETERINARY CONGRESS IN PRETORIA.—A veterinary conference, or better, a South African Veterinary Congress, has been recorded through the professional and the general press of England and the news spread all over the continent. The news was pleasant to hear and all agreed as to the importance that such reunions can have and the good that it may do.

The first, I believe, of its nature; the gathering took place in Pretoria, in January last, and was attended by members of the profession from the Southern part of Africa nearly as far

up as the equator, including Madagascar. Indeed, in the photograph that was published in the *Veterinary Record* there are the likenesses of men coming from the Transvaal, Natal, Basutoland, Bechuanaland, Madagascar, Belgian Congo, Cape Colony, German S. W. Africa, Portuguese E. Africa, etc., etc. The program was unusually interesting and the papers called for very serious discussions, among them were Glanders, Tuberculosis, Lung Sickness, Rabies, Epizootic Lymphangitis, Trypanosome diseases, etc.

Before adjourning, a committee was appointed to take the necessary steps to insure the success of the next conference. I wonder if one day the international veterinary congress will not be held over in South Africa. Rather far, but a grand trip, anyhow!

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BIBLIOGRAPHICAL NOTES: VETERINARY SURGICAL OPERATIONS.—I welcome Volume III. of *Veterinary Surgery* of Prof. Louis A. Merillat, of the Chicago Veterinary College, which is published by Alexander Eger, of Chicago.

Under the title of "*Veterinary Surgical Operations*," the learned professor completes the series of his works. The first volume published in 1905 had for title "*Animal Dentistry and Diseases of the Mouth*." The second presented the reader with the "*Principles of Veterinary Surgery*," issued in 1907. Again, after two years, the work is finished and is well completed. It is certain that known as the author is, with the undoubted success that his two first publications have met with, the third will be to all veterinary students and practitioners, as it is to me, "Welcome." The professor and I are strangers, we know of each other only by correspondence, therefore, I can scarcely be suspected of partiality when I write this word.

I have found "*Veterinary Surgical Operations*" good because it is written in an easy reading manner, because the subjects are well arranged, the description concise, the technics well described, all the minutiae of surgical preparations, restraint, indications, equipments, etc., etc., all are well drawn.

Of course, I have objections, which I regret, but after all if I make them, they do not take anything from the value of the work. And besides, the author makes almost apologies for their possibilities. Why ignore so entirely classical operations as he remarks in the preface. Some certainly are and will remain good. The methods of performing operations as the author describes them, are those of the author. I like that! But why avoid comparison which might have been in his favor. And again, if we are to accept that principle, the conclusions as to the usefulness of the operations as the resume of the author's observations, can I not ask him why he still holds to the old fashion of phlebotomy with fleams, when more modern surgery resorts to the trocar, as *safer, cleaner and more scientific*. (Of course, I allude to general blood-letting, not to that for experimental purposes which the professor briefly describes.)

And again, as long as some operations ought to be omitted, why did you not, my dear Doctor, ignore once for all that old and horrid method of docking with its annex, the forge and the special firing iron, as long as you give such a good description of this method, *the most surgical*, of amputation of the tail, the *dovetail method*.

But of course these are, let us say trifling objections, and as I have said they do not diminish the good qualities of this new addition to our American veterinary literature.

Well gotten up, handsomely illustrated, sufficiently and not to excess, with a little over 500 pages of reading matter, the entire contents are divided into thirteen chapters. An introduction with illustrated description of what I suppose is *the* modern operating-room of the new world, opens the book and is followed by the contents of the chapters: Surgical Processes, Elementary Operations, Neurotomy, Tenotomy and Myotomy, Castration and Spaying, Fistulas, Throat Operations, Hernia, Lithotomy, Special Amputations, Abdominal Operations, Choke, Miscellaneous Minor Operations, Accidents. All of which will certainly be read with pleasure and profit.

REPORT OF THE BUREAU OF ANIMAL INDUSTRY.—The twenty-fourth report of the Bureau of Animal Industry has reached me. This issue is quite regular in its arrival and when it comes it always brings a quantity of most valuable material. For many and certainly for the officials principally, it only shows the work done; but for the practitioners, the veterinarians and the agriculturists, the contents that are found yearly in the publications that Chief A. D. Melvin transmits to the Secretary of Agriculture, and that are printed, bring to the interested reader information that would otherwise remain unknown and lost. Among the pages of this volume there is a paper by Mr. Georges M. Rommel, of the Bureau, on the "Preservation of Our Native Types of Horses," with numerous illustrations where important facts relating to the breeding of carriage horses in Colorado, Vermont and other states are related and where professors of zootechny in our veterinary colleges will gather very valuable instruction. And again, as already in the days when the material for this 24th report was being gathered, the question of milk was beginning to be agitated. Of course, the officers of the Bureau settled to work, and see the results. "The Effects of Diseases and Condition of Cattle Upon the Milk Supply," by Dr. J. R. Mohler; "Some Important Factors in the Production of Sanitary Milk," by Mr. E. H. Webster; "The Classification of Milk," by Chief A. D. Melvin; "Milk and Its Products as Carriers of Tuberculosis," by Dr. E. C. Schroeder. Milk inspection is decidedly coming as THE opening for veterinarians. *Tuberculosis*, of course, occupies a certain amount of space with communications from J. R. Mohler and from H. J. Washburn. There is also a very interesting article by A. D. Melvin and J. R. Mohler on a "Dermal Mycosis Associated with Sarcoptic Mange in Horses"; it is illustrated. "Dehorning of Cattle" is treated by Dr. R. W. Hickmann. And besides all this which is of special veterinary interest, there are pages of miscellaneous information which deserve the attention of all engaged in live stock industry.

In closing, I wish to acknowledge the receipt of the "Second Annual Report of the Live Stock Sanitary Board of North Dakota," with the beautifully illustrated article of Doctor E. Van Ess, and his investigations in the preparations of mallein, tuberculin and Hog Cholera Serum.

From Doctor M. E. Knowles I have the pamphlets on "Arsenic in Vegetation Exposed to Smelter Smoke" and "Chronic Arsenical Poisoning of Herbivorous Animals."

Several circulars also came: From Pennsylvania on "Foot and Mouth Disease," from the Bureau on the same disease and on the "Test of Bruschetrinis's Hog Cholera Vaccine" and "Hog Cholera and Swine Plague Serum"; also, "Infectious Anemia in Horses," by Doctor J. R. Mohler.

Finally, the February issue of the *Agricultural Journal* of the Cape of Good Hope.

A. L.

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### CHICAGO IN SEPTEMBER.

We are only three months from the forty-sixth annual meeting of the American Veterinary Medical Association, to be held at Chicago the week beginning September 6th. Elsewhere in this issue of the REVIEW may be found a communication from Secretary Lyman giving an outline of the program, setting forth its main features together with other data of especial interest at this time.

There are a number of striking circumstances which augur well for the success of the forthcoming meeting. One of these is the fact that state, provincial and municipal veterinary organizations are taking steps to be officially represented. In many instances the delegates selected by the subsidiary bodies are not members of the A. V. M. A. This will afford these veterinarians an opportunity of taking part in the proceedings of our great international convention and doubtless will be the means of materially increasing the active membership. The enrollment of members is less than nine hundred, yet it is estimated that

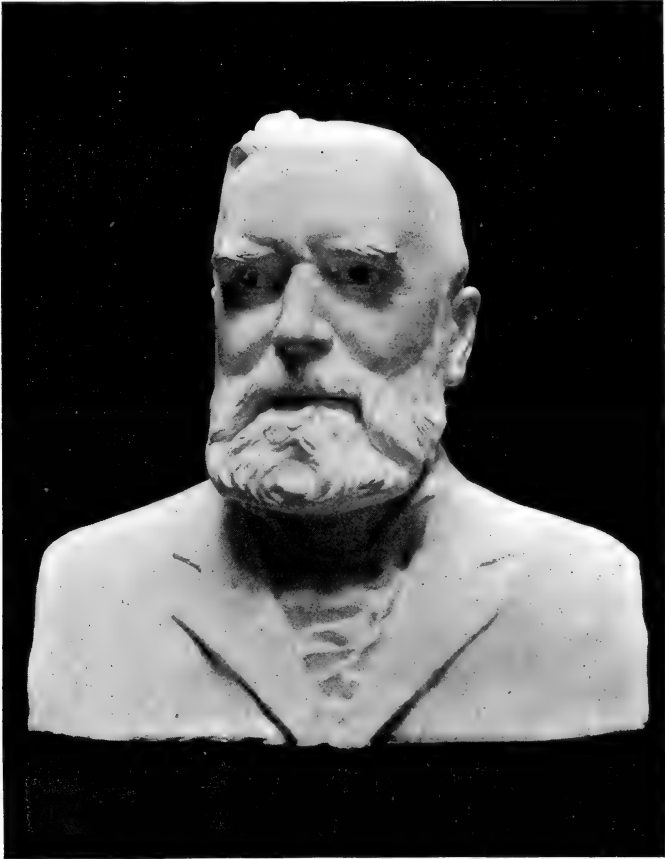
there are now nearly five thousand veterinarians practising on this continent who are eligible to membership in the A. V. M. A. This means that there are about four thousand American veterinarians who are not availing themselves of their highest professional privilege, to say nothing of the professional obligation they owe to the science by means of which the great majority of them gain a livelihood. However, to many the opportunity of their lives is only just now opening to their vision.

The action of the association in electing for president Dr. John G. Rutherford, a representative of the Canadian government, unites more intimately the interests of the veterinary profession of Canada and the United States. This will be magnificently demonstrated at Chicago.

Aside from its geographical, railroad and hotel advantages for a continental convention such as ours, Chicago possesses phenomenal attractions for the progressive, up-to-date veterinarian which are broadening to the careful observer, and that cannot be other than helpful to him in his own particular work. The immense live-stock markets, abattoirs, as well as the veterinary colleges with their splendid facilities for pathological exhibits and clinical demonstrations, all offer much for observation and study. Chicago has a large veterinary population, among whom are some of the most eminent members of the profession. Graduates of the McKillip Veterinary College and of the Chicago Veterinary College will be glad to have such a favorable opportunity of visiting their alma mater, and veterinarians educated and trained at other veterinary centres will be glad of the opportunity for inspecting conditions and methods at the Western metropolis.

Five years have elapsed since the death of Professor R. J. Withers, M. D., V. S., who, with Drs. Joseph Hughes and A. H. Baker, organized the Chicago Veterinary College in 1883, yet his memory is deeply cherished by the faculty and alumni of that progressive institution. We present herewith an illustration of the plaster cast of the bust of the late professor and president.

The cast will be in Chicago during the meeting of the A. V. M. A. for inspection by those who are interested in the work. It is proposed to have it reproduced in bronze and placed in a permanent position in the college.



The Inter-State Association of Live-Stock Sanitary Boards has changed its date of meeting to September 13, 14 and 15, so as not to conflict with the date of the A. V. M. A. meeting.

In accordance with a resolution adopted at the 1908 meeting of the Association of Veterinary Faculties and Examining



Boards of North America, the deliberations of that body will be divided into two sections, which are to hold preliminary meetings; one section representing the faculties and the other the examining boards. Dr. V. A. Moore has been named as chairman of the college faculties and Dr. M. H. Reynolds as chairman of the examining boards. Dr. Tait Butler, as president of the association, will preside over the deliberations of the general meeting. This affiliated body is rapidly assuming prominent importance in connection with the advance work of the parent organization—the A. V. M. A.

Some changes of supreme importance are contemplated in the A. V. M. A. program for this year. Changes which, if properly inaugurated and strictly adhered to, will ultimately be productive of inestimable good to the producer and the consumer alike of animal food products.

It is proposed to devote a session to "Milk Hygiene," from the economic and public health standpoints as well as from that of the live-stock interests, especially the dairyman's. The schedule outlined includes a prominent expert to discuss the subject from each point of view. The Committee on Diseases, it is expected, will occupy a session by presenting for study and discussion topics of vital importance and interest bearing upon sanitary problems confronting the profession. The report of the Committee on Intelligence and Education is being looked forward to with especial interest at this time since the U. S. Department of Agriculture is taking steps which are bound to lead to the advancement of the profession through the establishment of a broader as well as a higher standard of veterinary education in this country.

Problems confronting the general practitioner of veterinary medicine will be given a prominent place on the program, and while it is impossible in our editorial pages to go further into detail, we believe enough has been said to show that the makers of the Chicago program are determined that the 1909 convention shall occupy a most conspicuous place in the annals of veterinary progress on this continent.

## ORIGINAL ARTICLES.

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### THE BIOLOGIST'S PART IN PRACTICAL PLANT AND ANIMAL BREEDING.\*

BY DR. JOHN W. HARSHBERGER, PROF. OF BIOLOGY AND ZOOLOGY AT THE  
UNIVERSITY OF PENNSYLVANIA.

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The breeder's art has been practiced from the earliest times, since men began to domesticate animals. For the rules which were followed in ancient times we must look to the Latin and Greek classics where occasional reference is made to the methods of breeding used by the ancients. The Old Testament describes how Jacob took rods of green poplar and of the hazel and chestnut tree and removed the bark from the branches so as to give them a banded appearance. "And he set the rods which he had pulled before the flock in the gutters in the watering troughs when the flocks came to drink that they should conceive when they came to drink. And the flocks conceived before the rods, and brought forth cattle ring-streaked, speckled and spotted."

Each generation saw additions made to the breeder's code until quite a complicated series of rules based on actual practice were in force. But these rules varied with the experience of the various breeders and there was no harmony in practice, nor uniformity of opinion either as to the methods to be used or the results to be obtained by the use of this or that kind of mating and so it remained until the time of Charles Darwin, the great evolutionist, whose centenary we celebrated on February 12th of this year. Charles Darwin, tried to formulate the doctrines of the breeder's art, but he found the experience of breeders was inadequate to his purpose. He, however, collected the most important facts which he was able to secure by reading the works on the subject and by personal correspondence with the most re-

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\* Read before the Penn. State Veterinary Medical Association, Mar. 2-3, 1909.

nowned practitioners of animal and plant breeding. In the two volumes of his work entitled "Animals and Plants Under Domestication," he has embodied his observations and his generalizations upon this important subject and in several other of his books upon general biologic subjects, he has given us the experimental evidence upon which the breeder's art must be based. Darwin may be said, therefore, to have laid the scientific foundations of the breeder's art. Upon the foundation which he laid the subsequent superstructure has been built.

Many scientists have been at work upon the problems concerned in inheritance, cross-breeding, in-breeding, variation, adaptation, the origin of sex, determination of sex and similar questions of scientific interest. Great progress has been made by improvements of the microscope and of microscopic technique, and in a thousand and one ways the laws concerned in animal and plant breeding have been placed upon a sound scientific basis. The practical man no longer laughs at the efforts of that "scientific feller" whose work, if at all considered by him, was considered to be of no practical value. The animal and plant breeder have all to learn from the scientist and no man can practice the profession of a breeder successfully unless he is well grounded in the principles of the science of the breeder's art. The Pennsylvania Veterinary Medical Association has stood always for the proper education of the men who enter the profession and there is no more important subject which ought to be a part of the curriculum of the three years' course in the colleges of veterinary medicine than instruction in the science of the breeder's art. Not that every veterinarian will become a breeder, but a knowledge of what science has done in this field of investigation should be a part of the mental equipment of every Doctor of Veterinary Medicine. Incidentally, as many in this audience are aware, the speaker has endeavored in his lectures on biology to the veterinary students of the University of Pennsylvania to emphasize the important points concerned in animal and plant breeding. And it is with a feeling

of the value of the principles involved that he is here this evening to address this audience of practical men, as to the advisability of combining an acquaintance with the biologist's point of view with actual practice, so that scientific knowledge may be used as a check upon impossible or unprofitable kinds of breeding.

At the outset we should have clearly in mind the definitions of the terms used in a discussion of a subject. What do we mean by cross-breeding, in-breeding, hybridization and terms of like import. Cross-breeding is the mating of two individuals of different racial characters. All of the horses now on the British turf trace their ancestry in the direct male line to the Byerly Turk, the Darley Arabian and the Godeolphin barban example of cross-breeding which may also be between horses of the same race but of different parentage. In-breeding is the mating of two individuals of the same parentage as sister and brother, mother and son, father and daughter.

Hybridization is the mating of two individuals of different species of kinds, and the offspring are known as hybrids. The most noted example is the breeding of the jackass and the mare with the production of a mule which is sterile, or the reciprocal cross of a stallion and a she-ass (jenny) with the production of a hinny.

Experiments in hybridization have been tried with the other species of the horse kind, genus equus. They are all so closely allied that each will, at least in a state of domestication or captivity breed with perfect freedom with any of the others. Cases of fertile unions are recorded between the horse and the quagga, the horse and Burchell's zebra (dauw), the horse and the Asiatic wild ass (henionous), the common ass and the zebra, the common ass and Burchell's zebra, the common ass and the Asiatic wild ass, the Asiatic wild ass and the zebra and the Asiatic wild ass and Burchell's zebra.

Darwin enunciated the principle "that nature abhors continuous self-fertilization." He has given us by his experiments

narrated in his book, "Cross and Self-Fertilization in the Vegetable Kingdom," some precise data tending to show the actual effect of cross-breeding and in-breeding for a great variety of species of plants. His most extensive series was made with the common morning glory (*Ipomœa purpurea*). This species was bred, both crossed and self-fertilized for ten generations. In every generation the crossed were larger than the self-fertilized, the average being as one hundred is to seventy-seven. Not only were they larger, but they were more productive. In another place Darwin writes that the gain in constitutional vigor, derived from an occasional cross between individuals of the same variety, but belonging to distinct families is from the first manifest. The consequences of close interbreeding carried on for too long a time, are as is generally believed, loss of size, constitutional vigor, and fertility, sometimes accompanied by a tendency to malformation. Yet in his experiments with the morning glories, and elsewhere in his published works, Darwin calls attention to facts that seem to be contrary to the principle above enunciated. In the sixth morning glory generation, there appeared a specially vigorous plant that overtopped its own competitors by half an inch and exceeded in height all but three of the series. Darwin named this plant "Hero" and remarks: "I was so much surprised at this fact that I resolved to ascertain whether this plant would transmit its powers of growth to its seedlings." Accordingly, he fertilized a number of flowers of "Hero" with their own pollen and planted seedlings in competition with inbred plants and with the cross-bred as well. The results obtained showed that "Hero" and its descendants have varied from the common type not only in acquiring great power of growth and increased fertility when subjected to self-fertilization, but in not profiting from a cross with a distinct stock. Although Darwin was surprised at Hero and its descendants, we know now, however, that there are many hundreds of plants which possess cleistogamous flowers which are habitually self-pollinated without any apparent diminution in vigor, or hardi-

ness, as for example, our common blue violet which produces more seed underground than on the parts of the plant above the surface of the soil.

In another place, Darwin records the experience of animal breeders with regard to this question of close inbreeding for he says: "With cattle there can be no doubt that extremely close interbreeding may be long carried on, advantageously, with respect to external characters and with no manifestly apparent evil as far as constitution is concerned." Yet Darwin tries to shape these results to fit his views as the following quotation will show: "But the Shorthorns offer the most striking case of close interbreeding; for instance, the famous bull Favorite was matched with his own daughter, granddaughter and great-granddaughter, so that the produce of this last union, or the great-great-granddaughter, had 15/16th or 93.75 per cent. of the blood of Favorite in her veins. This cow was matched with the bull Wellington having 62.5 per cent. of Favorite blood in his veins, and produced Clarissa; Clarissa was matched with the bull Lancaster, having 68.75 of the same blood, and she yielded valuable offspring. Nevertheless, Collings, who reared these animals, and was a strong advocate for close breeding, once crossed his stock with a Galloway, and the cows from this cross realized the highest prices."

All of the recent breeding work has shown that inbreeding is not detrimental, but is a powerful means of improving a race of animals provided the breeder selects the animals to be bred with regard to constitutional vigor and fertility.

The general principle that must decide the method of breeding depends upon whether the breeder desires to improve his herd, to improve the breed or variety as a whole or to originate new varieties. The first method is the one which should be adopted by the ordinary farmer, or herdsman, because all kinds of breeding are costly, whenever the purpose is to produce something better than before. Grading, therefore, is the best practice where the commercial end of breeding is kept in view. By

grading is meant the mating of a common or relatively unimproved parent with one that is more highly improved. One pure-bred bull with a herd of twenty cows can give all the calves in the herd a pure-bred sire (that is, make them half-blood).

Expressed in terms of money, it is possible to give all the calves in a herd a pure-bred sire at a cost of about two dollars per calf. This plan has been adopted in New Jersey for the improvement of the horses in the State. Recently there have been imported from abroad twenty stallions and when the breeding power of these stallions has been tested, they will be distributed throughout the state, so that they can be used for breeding purposes by farmers and others interested in the improvement of their horseflesh.

Crossing of the ancestral lines of two distinct races is designed to blend or secure a fortuitous combination of characters. This form of breeding is adapted to the production of new strains, if Mendel's law is not operative. Mendel's law may be formulated as follows: Differentiating characters reappear in their purity and in mathematical regularity in the second and succeeding hybrid offspring; the mathematical law is that each character separates in each of these generations in one-fourth of the progeny and therefore remains true. In concise figures it is expressed as follows:  $1 D : 2 D R : 1 R$ ;  $1 D$  and  $1 R$  come true, but  $D R$  breaks up again into dominants and recessives in the ratio of 3 to 1. Castle, who addressed this society last year, discovered that this law holds good in the mating of guinea pigs and it has been found to hold good with the crossing of other small animals and in plants, especially the pea with which Mendel first experimented. The value of Mendel's law is that it gives to the plant and animal breeder an indication before mating of the character of the offspring which may be expected to be born, if such paired individuals Mendelize, and it indicates a method by which pure-bred types may be obtained. In this respect the discovery of Mendel may be said to mark an era in the breeder's art.

After this digression we will return to the question of Cross *versus* Close-breeding. There are two kinds of close breeding recognized by animal breeders, viz.: Line-breeding and in-breeding. Line-breeding is the restriction of selection and mating to the individuals of a single line of descent. By this method is secured a real breed improvement, for by it every animal is excluded outside of the approved and chosen line. This keeps the pedigree pure, because variability is discouraged and rapidly reduced to a minimum. The results to be obtained in line breeding can almost certainly be predicted.

Pronounced results are obtained if we follow judicious breeding of this sort, because it is strengthened by the simplicity and strength of the ancestry which if the selection has been good all pulls in the same direction. Prof. Davenport\* believes that no other system of breeding has ever secured the results that line breeding has secured, and if the present state of knowledge is reasonably sound, no other system will ever be so powerful in getting the best possible out of a given breed, or variety, especially of animals. The only requirement is not to abandon individual selection.

In-breeding is line-breeding carried to its limits, because it involves the mating of individuals closely related, such as sire and offspring, or of dam and offspring, or of brother and sister. Breeding the sire and his daughter gives rise to offspring three-fourths of whose blood are those of the sire, which if followed up practically eliminates the blood of the dam. Breeding the dam to her own son or sons successively increases the blood in the offspring of the female side. Breeding together of brother and sister is a form of in-breeding which preserves the blood of both sire and dam in equal proportions. It is inferior to either of the others, as a means of strengthening the blood lines. Among plants there are two kinds of in-breeding, namely:

1. That in which the fertilization is with pollen from another flower on the same plant;
2. That in which fertilization is by pollen of the same flower.

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\*Davenport, Eugene. Principles of Breeding, 1907, 612.



The advantages of in-breeding are evident when we consider that an in-bred animal is enormously prepotent over everything else. Its half of ancestry being largely of identical blood, is almost certain to dominate the offspring. It is the strongest of all kinds of breeding and it gives rise to the simplest of pedigrees. Another advantage is that successful associations of characters are preserved intact and not diluted by the infusion of new strains. The disadvantages are that this method of intensifying characters affects all the characters, bad as well as good. It has been followed by the most successful results and the most dismal failures.

Let us look at the modern methods of the plant breeders, as Burbank and Nilsson, before we consider the laws which determine the sex of animals. Darwin held that the production of species was by slow changes and he took his arguments mainly from a consideration of the agricultural side. De Vries showed by experiments with the evening primrose that it is possible to repeat and control the origin of horticultural and analogous varieties under strict experimental precautions and that the full proof may be given that they originate at once by mutation, and not by a slow process of chance. German plant breeders assumed, as a rule, that they produce their races at will and by a process of slow variability and repeated selection. Upon their experience Darwin based much of his reasoning. This German method has been subject to severe criticism by Dr. Nilsson, director of the Swedish agricultural experiment station at Soalöf. According to his experiments, changes occur in agricultural plants as suddenly as in horticultural species, so that the principle of mutation is conducive to the assumption of distinct units in the characters of plants and animals. Nilsson discovered accidentally a few cultures that were uniform and bore only one type among thousands that were heterogeneous.

To this accidental discovery combined with the exact scientific method of keeping extensive records we owe the following propositions according to De Vries. Ordinary varieties of ce-

reals are built up of hundreds of elementary forms which with a few exceptions, have hitherto escaped observation. They may be distinguished by distinct marks derived from their botanic characters. They have to be selected but once and afterward will be quite uniform and constant, with the exception of accidental hybrids which, however, will also yield constant and pure races after repeated selection. The purity of the races is such as to be practically absolute, but this does not exclude the occurrence of stray mutations by which new and valuable improvements may be secured. The high variability which is commonly attributed to our ordinary varieties of cereals consists only in the differences among these constituents of the mixtures. But these differences have been found by Nilsson to be so great as to afford material for all the climates and soils of Sweden. Willet M. Hays pursued a somewhat similar method of plant-breeding in Minnesota; for he found that in one thousand plants of wheat a few phenomenal yielders and by a method of single seed planting he found it practicable to secure these exceptional plants and from these new wheat varieties were made.

Recently Cyril G. Hopkins has discovered a somewhat similar method applicable to the improvement of the corn plant. Corn is selected in the field. Early in the fall, shortly before the time of harvesting, the farmer should go through his fields and mark the stalks of superior quality. At the time of husking the ears of the marked stalks are preserved carefully and kept as seed corn to be tested separately in experimental plots. The real selection is made the next year by the comparison of the progeny of the chosen ears. All such selection is based on performance since the aim of the work is the improvement of the hereditary qualities, and this selection is conducted in breeding plots. The best ears of the breeding plots are divided into two lots, the very best which is destined for the breeding plot of next year, and the other for the multiplying or increase field, where it is grown as seed corn for the commercial fields of the farm.

Burbank's method of plant-breeding rests on somewhat similar principles. He hybridizes various forms to increase their variability and then selects a chance sport as the starting point for a new variety, or race. His method is to grow hundreds of thousands of plants and select one or two out of this number of exceptional merit and destroy the rest of the plants. So that in a few years he produces results which it takes European breeders many decades to accomplish, because they cultivate a relatively small number of plants for selection.

Before considering the question of how sex is determined, preference must be made to a few matters of cytologic interest by way of introducing the discussion which follows:

When the maturation of an egg takes place in all cases the essential phenomena are the same. Two minute cells are formed, one after the other, near the upper, or animal pole of the ovum and in many cases the first of these divides into two as the second is formed. A group of four cells thus arises, namely, the mature egg, which gives rise to the embryo and three small cells or polar bodies which take no part in further development. The egg is now ready for the sperm and as the number of chromosomes is reduced by one-half, the preceding changes are called the reduction divisions. Reduction in the male takes place in the grandmother cell of the sperm so that the chromosomes of the male cell are reduced also to one-half the number in the animal body cells. When the egg cell and the sperm cell unite, the number of chromosomes is restored in the resulting cell or zygote to the usual number found in the animal's body and with this number the cell divisions take place leading through the embryonic condition to the adult form of the organism.

Having explained the cytologic changes involved in ordinary fertilization, we can understand better the problems concerned in a discussion of how sex is determined. Despite the technical difficulties, progress has been made in sex determination. The following questions arise: Is the germ of the original indeterminate sex determined later by external conditions? It has been

generally held that climate and food together with prenatal impressions have had their influence in determining whether an animal or plant shall be male or female. Or given identify in externals is it predetermined to be male or female? If such pre-determination exists what is its physical basis?

The experiments of Marchals with dioecious mosses prove that the non-sexual spores, though similar in appearance, are individually predestined as male-producing and female-producing; and all efforts to alter this predestination by changes in the conditions of nutrition, such as are known to be effective in the case of fern prothallia, failed to produce the least effect. The remarkable results obtained by Correns with dioecious flowering plants, such as the common bryony (*Bryonia dioica*) prove that the pollen grains, though apparently alike morphologically, are predestined in equal numbers as male-producing and female producing. Half the pollen grains upon fertilizing the eggs produce males and half females.

Cytologic studies on insects, myriopods and arachnids have demonstrated that in many of these forms a sexual predestination is clearly shown in the nucleus of the spermatozoa and in particular in the constitution of the chromosome groups. In all of the species studied half of the spermatozoa are characterized by the presence of a special nuclear element called the X-element, while the other half fail to receive this element. The X-element is a single chromosome, called by some the accessory chromosome, in Hemiptera, Orthoptera, Colloptera, Odonata, Myriapoda, Arachnida. It has no synaptic mate or partner, and therefore, in maturation divisions it passes into one one-half of the spermatozoa. In some cases, it has a synaptic mate, the Y-element. In maturation one pair receives the X-element and one the Y-element, as the following diagrams and table after E. B. Wilson will indicate to those who have followed my argument.

(a) In the absence of a Y-element. Diagram II.: Egg X spermatozoon X zygote XX (female). Egg X spermatozoon no X zygote X (male.)

(b) In the presence of a Y-element. Diagram I.: Egg X spermatozoon X zygote (female). Egg X spermatozoon y zygote X y (male).

These discoveries seem to open up wide possibilities, but our present state of knowledge is insufficient to absolutely affirm that sex is determined in all animals and plants in the manner above outlined. Nutrition seems also to play an important role for according to Young sex in tadpoles remains a long time indeterminate, and during this time the amount of food exerts a controlling influence upon their sex. In the lower mammals, as far as has been determined without the cytologic questions having been studied, temperature and nutrition seem to be controlling factors, and when such is the case it is remarkable that in every instance the production of females seems to accompany the more favorable conditions and that of the males the harder, or less favorable.

In this paper, I have endeavored to show that the practical plant and animal breeder cannot neglect to encourage the biologist in his pursuit of pure scientific investigation; because some of the apparently least practical research work may prove ultimately to be of the highest practical value.

Who among the older veterinary surgeons not familiar with the modern spirit of investigation would ever have suspected that a mere study of the small nuclear bodies of animals and plants by means of the microscope would be found to have application to the problems which perplex the common every-day plant and animal breeder. Yet the past few years have demonstrated time and time again that there is no investigation, however abstruse and intricate, but what may have the utmost value in assisting the practical man to understand the fundamental principles upon which the art which he has pursued for a lifetime is based.

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WE have just three months left to get ready for the Chicago meeting of the A. V. M. A.

# REPORT ON THE ANIMAL INDUSTRY OF INDO-CHINA\*.

BY CHARLES G. THOMSON, D. V. M.

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In accordance with your instructions of January 8, 1908, I proceeded via Hongkong to Saigon, Indo-China, arriving there January 22. I presented my letters from His Excellency the Governor-General of the Philippine Islands to the Governor-General of Indo-China. His Excellency expressed the cordial attitude of the government of Indo-China toward the Government of the Philippine Islands and his desire to co-operate in the furtherance of commercial relations between the two countries. He was deeply interested in the subject in hand and said that any suggestions this Government might offer as to quarantine and veterinary inspection of animals destined for Manila would be executed if practicable.

## EXPORTATION OF CATTLE AND CARABAOS.

Cattle and carabaos abound in such numbers in Indo-China as to render their market price far below their value in the Philippine Islands and other near-by countries. Exportation to the Philippine Islands is therefore quite profitable, but the shipment here of thousands of cattle during the past year has aroused the authorities and the European population to the necessity of retaining the greater part of their best animals. This sentiment is easily understood when one considers the immense agricultural development of the country and the consequent demand for cattle and carabaos; the increase in the market price of these animals, both for labor and food purposes; and the fact that the French are not realizing any profit from the industry.

Only foreigners have so far engaged in the business of exporting live stock from Indo-China. The people engaged in this business must surmount many difficulties. The cattle centres are

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\*The Philippine Agricultural Review.

some distance from the ports, so the buyers must proceed inland buying up cattle in small bunches, two here and three there, until a herd has been gathered of sufficient size to warrant the chartering of a steamer. The natives will not accept bank notes, so silver coin must be carried inland by pack horses. There are no facilities for transportation in those mountainous districts from which cattle are obtained for export. The animals must be driven overland to the ports and fires have to be built at night to protect them from tigers and leopards, which abound in Indo-China. And then, too, the suspicious attitude of the natives toward foreigners and their slow methods of transacting business are factors of considerable annoyance.

The men engaged in the business of exporting cattle from Indo-China all desire the maintenance of a quarantine in that country, if only for their own protection. Most of the animals destined for Manila are kept in corrals for some few days before shipment, awaiting the arrival of other animals from more remote districts and the coming of the steamer on which they are to be shipped, but are not subject to veterinary inspection at the present time.

#### CLASSES OF LIVE STOCK IN INDO-CHINA.

*Horses.*—The native horse of this country is a pony resembling in some respects the Filipino pony. Some of them are larger, but of a coarse type, showing their relation to the Chinese horse. They are comparatively few in numbers, and are supplanted by the jinrikisha coolies as a means of transportation.

*Cattle.*—Most of the cattle in Indo-China are of the kind known in Manila as "Saigon" cattle. They are of good beef type, but small. In their natural environment they present a far better appearance than that observed in Manila, carrying much more flesh. They are possessed of wonderful grazing ability and use their pasturage of sparse grass, young bamboo, and wild green stuffs to splendid advantage. The natural grasses of Indo-China are not superior to, nor more abundant than those in the Philippine Islands.

Cattle raising up to this time has received but little attention from the European inhabitants of Indo-China, but many inquiries on the subject have stimulated interest and a number of Frenchmen have intimated their intention of soon engaging in the cattle business.

The centres of greatest cattle breeding are in the hills of southern Annam and in Cambodia, where the animals run at large, unattended. The number of cattle in Cambodia is estimated at 350,000, in Annam over 1,250,000, and in Tonkin about 1,000,000.

The market value of cattle varies somewhat in different provinces and sections, the average being from P12 to P20 (piastres). In some sections cattle are so numerous that in the absence of a ready market they are practically without value. The Governor of Faifo stated that the natives in that section often kill cattle for their hides alone.

*Carabaos*.—In size and conformation the carabaos of Indo-China are about identical with those of the Philippine Islands. The carabaos, being stronger, are of more value than cattle in rice cultivation. The natives take more pride in them and place more value on them than on any other domestic animal. This preference of the natives, and the fact that carabaos are less hardy and more difficult to breed, tend constantly to raise the market value. At the present time prices range from P20 to P45.

*Hogs*.—The hogs of Indo-China are of a far better kind than those native to the Philippine Islands. As a flesh type they are splendid, being of compact conformation, straight-backed, heavily-loined, and with big hams. The hollow-backed, sway-bellied type so common in the Philippine Islands is not numerous in Indo-China.

The hog industry is considerably developed, as swine of any size and in good condition find a ready market at home or in Hongkong. The average price of hogs as quoted to me is



P10 to P18. The natives appreciate the response of the hog to generous feeding and before marketing feed them with rice and other available food stuffs.

*Sheep and Goats.*—There are some few sheep in Annam, but I had no opportunity of observing them.

There are very few goats in Indo-China, the types there being about the same as those in the Philippine Islands.

### LAWS RELATIVE TO LIVE STOCK.

The provinces of Cambodia, Annam and Tonkin have no registration of cattle and no taxation. Cochin-China has a system of registration. Some changes in the laws relating to the exportation of live stock, especially of carabaos and cattle, have been under consideration the past year, during which time considerable inroads have been made on the number of cattle in Indo-China by exportation to the Philippine Islands and Hong-kong. The laws, as they stand now, prohibit only the exportation of female animals, but a measure recently passed and sent to France for confirmation will prohibit the exportation of all animals under five years of age.

However, the lack of registration in those provinces from which cattle are shipped to the Philippine Islands will render the enforcement of this law nearly impossible. A statute limiting the number of cattle to be exported to 10,000 annually is now under consideration. The province of Cochin-China has prohibited the exportation of any cattle or carabaos, as the retention of all these animals is deemed necessary in that province because of the immense agricultural development and the large demand for cattle for local consumption.

### VETERINARY SANITARY LAWS.

The French law of 1881 applies to Indo-China, being amended to include certain tropical diseases existing in that country but not in France. These laws provide for a rigid quarantine around districts known to have been affected, the quaran-

tine to be maintained until the veterinarian in charge releases the animals, or until one month elapses from the date of last evidence of infection.

Animals suffering from, or having been exposed to, rinderpest or certain of the other dangerous diseases, are slaughtered, the owners being allowed an indemnity of three-fourths the value of the animals killed.

The veterinarian suggests to the provincial authorities any additional quarantine provisions deemed necessary. The suggestions are made ordinances and rigidly enforced.

#### VETERINARY SERVICE.

The veterinary service is well organized and distributed, consisting of twenty-four men who are stationed in the so-called sanitary districts, as follows:

*Cambodia*.—Pnom Penh (2), Prey Kompong (Cochin-China), Saigon (2), three auxiliaries.

*Annam*.—Than Hoi, Hue, Nha Trang, Qui Nhon, An Khe.

*Tonkin*.—Hanoi (4), Haipong, Phu-lang Thuang, Nuoc Hai, Thai-Nguyen, Thuyen-Quang, Yen Bag, Nin Binh.

M. Lepinte, is the chief.

The veterinarians are responsible for the sanitary condition of their respective provinces and must control any outbreaks of infectious disease that may develop. They superintend the zoötechnic institution of their province and inspect at the abattoir daily. Each has a corps of competent assistants and is provided with a laboratory containing the necessary bacteriological apparatus. They are well paid, receiving an average of about \$1,800 (United States currency) per annum. In addition each is provided with a house at his permanent station and with horses or coolies for local transportation.

Upon retirement from the service they receive a pension from the Government, the amount being proportionate to the length of time in the service. When called from a permanent station to more remote districts in the provinces they are given every available facility for transportation.

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VETERINARY COLLEGE FOR NATIVES.

In 1904 the construction of the buildings was begun, being completed in all essential details in 1905. The college is located in the city of Hanoi, the capital and most important of the cities of Tonkin. Its location in Hanoi commands a ready supply of all the domestic animals for clinical and experimental observation.

This college is for the natives (Annamites) only. At present there are some thirty students at the college, these men having been selected from the native high schools for their adeptness in studies and especially for their proficiency in the French language. The government pays the students about P15 a month while at college, this sum being sufficient to support them. The payment of this monthly salary renders it possible for even the poorest boy to study there, if he maintains a sufficiently high average while in the high school to warrant his appointment. This necessarily stimulates scholarship in the lower schools and secures ambitious young men for the college.

On graduation the Annamites are stationed in the provinces where each must, first, keep closely in touch with the sanitary conditions in his district; second, must deal promptly by quarantine measures and use of serums with any diseases of infectious nature that may develop; third, must respond to calls upon his services made by the inhabitants who possess sick or injured animals. They are not entitled to fees from the natives for these services, but are paid 700 pesos (piastres) annually by the Government of the Province of Tonkin. They are furnished by the Government with serums, medicines and necessary instruments. The first graduating class leaves college this year. The authorities anticipate highly efficient services from them, because, being natives, they can easily gain the confidence of the people in those measures and inoculations deemed necessary against infectious disease, and by mingling with the natives can quickly discover any outbreaks of disease that may occur. (It is interesting to note that the French authorities and veterinary corps have ex-

perienced the same difficulties which have been met in the Philippine Islands, in obtaining information of outbreaks of disease before the infection has become widespread.) The reduction in salary average of the veterinary corps will be considerable.

The main building is the study hall, in dimensions about 30 by 100 feet. It is divided into three halls, one for each of the three classes, each hall containing a library, and the other things necessary at its particular period of study. Adjoining this building on the left is the hospital for horses, mules, cattle and other large animals which may be entered at the clinic. This building contains about ten large, well-ventilated stables with slightly inclined asphalt floor permitting of good drainage, and measures about 18 by 60 feet. Adjoining this is the clinic, containing the operating room, which is not complete in detail as yet, and the dispensary, in which the students themselves compound all prescriptions. In this building there are, also, the pens for dogs, cats and other small animals which may be entered for observation. These pens are uniform iron-barred cages, measuring about five feet square and high. There is near by a small shed wherein the small experimental animals (guinea pigs, rabbits and rats), are bred and kept. Each department is supplied with instruments, apparatus and specimens necessary for its particular branch of study and work.

All of these buildings are constructed of brick and faced with concrete, presenting an appearance of solid granite. They are arranged in the form of a capital "E" inclosing an open court, soddied with grass, where convalescents are allowed to graze. The entire grounds and buildings are surrounded by a high concrete fence, and as a whole present a most cleanly and fresh appearance.

The staff of instructors comprises three veterinarians and two physicians. They are all government men and are specialists in the subjects which they teach. The actual clinical work is in charge of the military veterinarian who is stationed at Hanoi. He is an exceedingly practical veterinarian because of the nature of his duties.

The students must devote three years to college work. The first year study embraces anatomy, physiology, and the other basic subjects. Much time is spent in actual dissections of the horse and other domestic animals. The second-year work includes materia medica, therapeutics, surgery, pathology, bacteriology, and the methods of handling the specific infectious diseases. The work in the third year is devoted to much practical work, in the clinic as well as to a deeper study of all the veterinary subjects. The various courses are demonstrated by means of text-books, lectures, papier-maché models, and charts, up-to-date apparatuses being supplied for the pursuit of the advanced studies. Throughout the course special stress is laid upon the subject of infectious diseases and the methods of handling outbreaks, and considerable attention is devoted to parasitism. The third-year men have all obtained a splendid grasp of veterinary science and, in clinic, manifest a pronounced enthusiasm in their work.

When I visited the college (February 15 and 16), the hospital was filled with patients suffering from the various diseases common to domestic animals. These animals had all been submitted for treatment by their owners in Hanoi. A nominal charge is made by the college authorities for the subsistence of animals, the medicine and attendance being free.

It is impossible, at the present time, to furnish an estimate of the cost of construction and maintenance of the college, but these figures will soon be at hand, as Monsieur Brenier, subdirector of Agriculture and Commerce, is sending the annual budget of the province of Tonkin, which should arrive about the 25th instant. However, this estimate will be misleading, as labor and materials of construction are considerably cheaper in Indo-China than in the Philippine Islands.

#### DISEASES PREVALENT.

*Rinderpest.*—Rinderpest has existed in Indo-China since 1896. In 1899 very severe losses were caused by a widespread outbreak. In recent years the disease has never been so wide-

spread nor so virulent as to cause any considerable anxiety, it being confined almost entirely to Tonkin and existing there only in isolated outbreaks.

The virulence of rinderpest as observed in Indo-China varies in the different sections, but nowhere is it as high as in the Philippine Islands. The outbreaks in the northern part of Tonkin have been the most virulent, the mortality being about 50 to 65 per cent. in cattle and 80 to 90 per cent. in carabaos. In southern Annam the mortality ranges from 15 to 25 per cent. in cattle and 40 per cent. in carabaos. In Cambodia and Cochin-China it is seldom identified. Phuyen, from which large numbers of cattle have been shipped to Manila, has never been subjected to rinderpest, as it is inclosed by a chain of high mountains effectually shutting off all intercourse with the surrounding districts which have from time to time been infected.

In combination with other diseases rinderpest presents a much more formidable mortality. It is occasionally observed with surra and septicæmia hæmorrhagica.

*Surra*.—Surra has been observed in Indo-China for some years and in all respects is similar to that encountered in the Philippine Islands. The disease is most prevalent in Cambodia.

*Anthrax*.—Anthrax is almost unknown in Indo-China, no serious outbreaks having been observed there during the occupation of the French. A few isolated cases have been identified from time to time by Dr. Yersin, of the Pasteur Institute.

*Symptomatic Anthrax (blackleg)*.—This disease has been identified by Drs. Yersin and Vassal, the latter having observed about fifty cases in some five years.

*Foot-and-mouth Disease*.—This was identified in 1899, but in later years has not been observed.

*Texas Fever*.—Nearly all of the cattle of Indo-China carry the cattle tick and, like the cattle of the Philippine Islands, are immune to Texas fever.

*Glanders.*—This disease exists in Indo-China, but has never constituted a serious menace to the colony. The positive diagnosis of glanders is followed by the immediate slaughter of the infected animal.

*Dourine.*—Dourine exists in Indo-China, being especially common in Cambodia. There is an outbreak there at the present time, so any horses coming from that district should be carefully examined, if admitted into the Philippine Islands.

*Tuberculosis.*—Abattoir records show that tuberculosis exists among the cattle of Indo-China, about two-tenths of one per cent. showing lesions on post-mortem.

*Rabies.*—This disease is very common among dogs in Indo-China.

#### SERUMS USED.

*Anti-rinderpest.*—Anti-rinderpest serum is manufactured at Nha Trang by the Pasteur Institute, a branch of the Paris establishment. It is a private institution, the output of the serum laboratory being contracted for by the government. The peritoneal-wash method of Adilby, of Constantinople, is used in the preparation of anti-rinderpest serum. It is impossible to pass upon the efficiency of this serum in comparison with that manufactured in Manila, as I had no opportunity to compare equal inoculations of the two.

The dose of their serum is 20 cubic centimeters and the immunity given is for but three weeks. The cost of the serum to the government as quoted to me is about P1 per dose of 20 cubic centimeters, which is about double the cost of that prepared in Manila. This in spite of the fact that animals for serum purposes can be purchased fully 100 per cent. cheaper in Indo-China than in the Philippine Islands. There are 700 serum animals at Nha Trang, from which 200 liters of serum are prepared per month.

*Anti-septicæmia Hæmorrhagica.*—This serum is also prepared at Nha Trang. The process is long drawn out and the

serum when prepared is not very efficient in giving even a short immunity against the disease. In preparation, the serum animals are inoculated with 1 cubic centimeter of virus simultaneously with 20 cubic centimeters of serum, this inoculation being preceded two days by an inoculation of 20 cubic centimeters of serum.

The virus is a culture from agar slant diluted ten times with sterile water and is very strong. If given alone it would cause the death of the animal in from twenty to thirty-six hours. The day following the inoculation the temperature of the animal usually rises to  $40+^{\circ}\text{C}$ . but recedes to normal the next day thereafter. After two weeks the same inoculation of virus is repeated and is usually followed by a light reaction. Following this at intervals of two weeks injections of 5, 10, 15, 50, 100 and 200 cubic centimeters of virus are given. The animals are then bled when their condition warrants. This extended process of immunization is necessary in the preparation of this serum as the virus is strong, resistance weak, and hastening the process results in decided emaciation of the animals.

Phlebotomy is resorted to in drawing blood from anti-septicæmia hæmorrhagica serum animals. Two liters only are taken at one bleeding. The blood is allowed to coagulate in a cool place and the serum is not sterilized, but bottled when poured off. Cylindrical earthen jars of 2 liters capacity are used to contain the blood. A perforated metal plate is adjusted at the top of each jar and is allowed to sink when the clot is forming, so as to press out all of the fluid possible.

#### DANGER OF IMPORTING DISEASE FROM INDO-CHINA INTO THE PHILIPPINES.

Importations from Indo-China to date have been, with two or three exceptions, singularly free from rinderpest and other infectious diseases, and conditions in that country are such as to warrant the prediction that future importations will carry as little, if not less, disease.



It has already been mentioned that but little rinderpest exists in Indo-China at the present time, and that those outbreaks occurring are of low virulence and so isolated as to be very easily placed under control. It has also been pointed out that those districts from which the most of our cattle are obtained (and from which they must always come), are especially free from the infectious diseases.

These conditions, together with the protection afforded by the well organized and equipped veterinary service and the laws prohibiting exportation from districts known to have been recently infected with rinderpest or other diseases of infectious nature, are of deep significance in the question of obtaining healthy animals from foreign countries for the Philippine Islands.

If advantage is taken of the proposition of the Governor-General of Indo-China to provide ample quarantine facilities and veterinary inspection before embarkation of animals destined for the Philippine Islands, importations from that country should be almost, if not entirely, free from infectious diseases.

#### ZOÖTECHNIC WORK AND RESULTS.

The Zoötechnic Institution was established about twenty years ago, but only during the last ten years have any determined efforts been made in this work.

The institution is under the direction of the Bureau of Agriculture, through its chief veterinarian. The main station is at Hanoi. This establishment is the most complete institution of its kind that I have ever seen. It is composed of twelve buildings constructed of brick and faced with concrete, distributed over the 40 hectares of land belonging to that station.

Beside the principal station at Hanoi there are numerous other stations at various important cities of Indo-China, but these are not so large or so well improved. An annual appropriation of about P200,000 is provided by the general budget for carrying on the zoötechnic work and special appropriations are made for importations.

*Horses.*—The main object of the institution is the improvement and increase of the Indo-China horse, and with this pur-

pose in view over 700 sires and dams have been imported from Russia, Australia, France, Germany, Spain and England. At the present time there are about 200 of these imported animals at Hanoi.

The French authorities in their efforts to produce better horses by crossing with the native stock have proceeded along different lines from those followed in the Philippine Islands. In addition to importing sires and breeding to the native mare they have also imported mares and used the native sire. The results have been good, as the foals from the large mares have been uniformly large and sturdy. However, it is problematical if this course is wise. The imported mares can produce but one foal a year each, while on the other hand the same amount of money expended in importing sires would have resulted in probably fifteen times the number of offspring.

The government of Indo-China offers every inducement to the inhabitants for the use of selected sires deemed best. There are some sixty sires distributed throughout the country and maintained solely for service of animals belonging to the natives. The government pays P4 to the owner of every native dam that drops a foal by a government sire; this as an inducement for the use of the sire. Or the government will import mares and sell to any responsible person for 60 per cent. of their cost, landed. For the first foal dropped the government pays 30 per cent. of the original cost of the dam, and for the second, third and fourth 20 per cent. each, the owner of the dam retaining the foals.

In three years, if three foals have been dropped, the possessor of the mare has been paid by the government almost the original cost to him and yet has the four animals.

The government reserves the right to purchase any winners at the race tracks desired for the stud, and fixes a maximum value of P500 for this purpose. I mention this to show that the government of Indo-China is sparing no expense in their efforts to improve the native stock of the colony.

*Cattle.*—The government appreciates the significance of the cattle industry in the commercial economy of Indo-China and

has endeavored to give it impetus at different times and to emphasize the advantage of improved methods of handling and breeding. There is ordinarily no systematic breeding or selection of sires and dams, the animals being simply allowed to graze and increase by natural selection.

Expositions of live stock are held from time to time at Hanoi, Phuyen, Phnom Penh, and other places, at which the best native cattle are exhibited, along with imported animals of good beef and dairy breeds.

Some efforts have been made to introduce dairy cows from France into Indo-China, but without success. The offspring obtained by crossing these dairy animals with native cattle has reverted into the beef type. Other experiments along the dairy line have not been successful. Improvements in the beef type have been attempted and have met with some success. The results obtained by the use of imported Indian sires have been the best to date.

*Sheep.*—Attempts to introduce imported sheep into Indo-China have met with decided failure until within recent months, when sheep were brought from the Malay Peninsula which, up to this time, have been doing well and breeding rapidly.

*Hogs.*—Not much has been done in the improvement of hogs, the native stock being of so good a type that much improvement is not necessary and efforts therefore have been directed along other lines.

In concluding this report, I wish to express my appreciation of the courteous reception and assistance extended to me by His Excellency Governor-General Beau, Mr. Capus (Director of Agriculture), Mr. Brenier (Subdirector of Agriculture), and Mr. Lepinte (Chief Veterinarian), and especially I wish to mention the kindly interest and assistance afforded me by Mr. Connor, United States Consul at Saigon, and Drs. Schein and Vassal, of the Pasteur Institute at Nha Trang. The efforts of these gentlemen were of invaluable help to me in the performance of this mission.

## INFECTIOUS DISEASES FOLLOWING BENCH SHOWS.

BY J. McI. PHILLIPS AND L. P. GARRAHAN.

*From the Pathological Laboratories of the Ohio State University.*

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Every bench show is followed by an outbreak of canine distemper among the animals exhibited, and often among the dogs in the kennels to which the show dogs have been returned. As a general rule the larger the show the greater is the proportionate number of dogs that become sick. When a circuit of shows is so arranged that one show follows another, and many of the dogs are exhibited at all of them, the number of cases of distemper which follow in its wake is very great.

Most dog shows are of from three to four days' duration. The American Kennel Club, the governing body for dog shows, very wisely prohibits shows of longer duration. It also forbids the exhibition of dogs less than six months of age, and provides that all dogs younger than one year can be removed from any show after their judging, which must be completed by the end of the second day. No show can be held under the auspices of the American Kennel Club unless one or more qualified veterinarians are in charge of the health of the dogs. The veterinarian must examine all dogs as they arrive, and exclude those suffering from contagious diseases. He must inspect the dogs daily, and have all developing contagious diseases removed from the show at once. Even though the veterinarian is a competent man and performs his duties in the most conscientious way, the usual train of death follows the show.

We believe that there are two forms of disease in dogs which are commonly called canine distemper. We have never seen an outbreak of the disease described in the textbooks as "bench show distemper," and from our experience believe that these cases are simply milder cases of distemper.

The true distemper characterized by its protean types is perfectly familiar to most veterinarians.

The other disease is called by some German veterinarians "dog plague," or "Stuttgart dog plague." This may be only another form of distemper, but it seems to differ in some very important clinical characteristics, so that until an exact bacteriological diagnosis can be made, we think it is justifiable to class it as a separate disease. Older dogs are more commonly attacked than in distemper. It is characterized by its short period of incubation—one to three days. It begins as an intense gastro-enteritis, which may or may not be accompanied by an *intermittent* fever. The temperature may be subnormal. Diarrhœa black, bloody, or clay-colored, is always present. In some cases constipation marks the beginning of the attack. Fifteen or twenty stools in a day are not uncommon, and they are usually accompanied by tenesmus. The insertion of a thermometer into the rectum causes much pain. Some dogs vomit and refuse their food early in the attack, while others eat ravenously at first, but anorexia soon appears. Occasionally a dog shows a tendency to eat his bedding and other foreign bodies. A brownish red discoloration of the gums next to the teeth is often seen, and superficial ulcerations on the gums and on the upper lip where it comes in contact with the canine and incisor teeth are not unusual. Late in the disease the tongue assumes a shriveled, dry appearance. The nose is cool during the entire course of the disease and does not discharge, but the eyes become somewhat or greatly inflamed and reddened, and often have a curious, fixed expression with the pupils dilated. No skin eruptions occur. A slight cough may be present and is most apt to occur coincidentally with a hypostatic pneumonia. Emaciation is astoundingly rapid, and, in the cases with bloody diarrhœa, a profound anemia promptly occurs. The animal often sleeps a great deal and becomes lethargic and very weak. We have not seen paralysis and the so-called chorea occur as complications, but more or less severe epileptiform convulsions may occur. Death results from exhaustion—often with a sudden collapse.

The mortality is very high. We should say about 30 per cent. in all cases. The prognosis is usually absolutely unfavorable when the attack commences with vomiting and a bloody diarrhoea, and in puppies. Since the severe cases only are taken to canine hospitals, the mortality is much higher in hospital practice.

We do not believe that dog plague is nearly as common as distemper.

One attack apparently confers complete immunity to this disease, but not to distemper, nor does a severe attack of distemper seem to confer any immunity to dog plague. The authors had a fatal outbreak of dog plague exterminate a lot of experimental puppies which had recently passed through true distemper as the result of inoculations. One of us has personally shown at the same show dogs immune to both diseases, dogs which had passed through distemper, and others immune to dog plague only, and has had both diseases break out in the dogs which were susceptible to each, but not in those which had previous attacks of both diseases. It must be remembered, however, that true distemper does not always confer a lasting immunity, but second attacks are less fatal, especially if the first one was severe.

We believe that the gross morbid anatomy of this form of disease is characterized by a marked thickening of the mucous membrane of the small intestine so that it assumes an edematous, velvety, hemorrhagic appearance. The longitudinal folds of the mucous membrane in the large intestine are thickened and hemorrhagic on their summits, a condition that we have only noted in the dog in cases of malignant jaundice. The contents of the bowel are red blood, and mucus in its upper part, while in the lower bowel there may be a black, sticky, tar-like, offensive fluid, or mucus streaked and mixed with blood. Sometimes the hemorrhage is so great that the contents look like tomato catsup or thick red paint. In true distemper we have not noticed this peculiar thickening of the intestinal mucous membrane. When pneumonia is present the changes in the lungs are not like the

familiar purulent broncho-pneumonia of distemper, but resemble those seen in a typical hypostatic pneumonia.

The differential diagnosis between isolated cases of dog plague and the enteric form of distemper is not easy. The principal difference in the symptomatology of the diseases have already been pointed out. When the disease becomes epizootic in a kennel, the absence of nasal discharge, severe cough, chorea, paralysis, and the rarity of continued high fever in any of the dogs attacked makes the diagnosis comparatively easy.

Dog plague must also be distinguished from an acute invasion of uncinaria or hook-worms in puppies and young dogs. This terrible scourge of the kennel is very common, and its symptoms in young pups are very like those of dog plague. The puppies are always very anemic, as is shown by the white gums and tongue, and have more or less diarrhoea before the acute symptoms manifest themselves. The only accurate way to differentiate the two is to make a microscopical examination of the feces of the sick puppies for the transparent, thin-shelled oval ova containing the segmenting embryo.

During the winter a circuit of bench shows was held in the Middle West, commencing with Louisville, Ky., Jan. 11-16, followed by Toledo, O., Jan. 17-19; Akron, O., Jan. 20-23; Cleveland, O., Jan. 27-30; Columbus, O., Feb. 3-6. Of the dogs shown on this circuit some began at Louisville, and most of the others at Toledo, and were shown at all the rest of the shows. At each city many local dogs not on the circuit would be shown.

The veterinarian at Columbus was a competent, careful man, and gave more than the usual attention to the dogs, but in spite of this a great deal of disease followed. We do not think, however, that any more dogs became sick after this show than is usual after any "tail-end-of-a-large-circuit-show," and simply chose this show as one of its type from which to obtain statistics.

A circular letter containing a blank with a large number of questions covering almost every possible point and symptom was sent out to each exhibitor. On the whole the answers to these were very carefully made.

The professional handlers gave us the most trouble. Two of those who did answer evidently did not tell the truth, but said that none of their dogs became sick as they had a secret method of preventing disease which they used, and no dogs handled by them ever became sick. We had seen sick dogs in the care of both of these men. Two told the truth and the others did not answer. We believe, however, that the answers represent fairly well the percentage of sick dogs for the whole show, as the handlers' answers only referred to the dogs owned personally by them.

|                                                  |     |
|--------------------------------------------------|-----|
| Total number of dogs in show.....                | 385 |
| Number of dogs given in answers received.....    | 230 |
| Number of dogs which did not become sick.....    | 107 |
| Number of dogs which became sick.....            | 123 |
| Deaths .....                                     | 34  |
| Complete recoveries .....                        | 66  |
| Recovering with partial paralysis or chorea..... | 11  |
| Recovery with blindness.....                     | 1   |
| Still sick (six weeks after show).....           | 11  |

The answers were carefully gone over and all dogs with skin eruption, paralysis, chorea, nasal discharge and severe cough we considered as distemper. Those which showed nothing but severe diarrhoea we considered as dog plague. The two groups were:

|                                      |    |
|--------------------------------------|----|
| Dogs which contracted distemper..... | 73 |
| Deaths from distemper.....           | 21 |

Of the 73 distemper cases, 63 were in dogs which were never known to have had the disease and 10 in dogs which were supposed to be immune from previous attacks. Of the latter, but two died.

|                                   |    |
|-----------------------------------|----|
| Dogs which contracted plague..... | 47 |
| Deaths from plague.....           | 13 |



Twenty-five of these plague cases occurred in dogs which had previously recovered from severe attacks of distemper, and 22 (3 of which were fatal) in dogs never known to have had that disease.

Sick dogs in which the diagnosis was doubtful from the answers to the questions ..... 3

Among the dogs which were clearly afflicted with distemper, including the fatal cases, 26 had chorea, or chorea with paralysis, 6 had paralysis alone, 14 had skin eruptions, and 39 diarrhœa. One bitch aborted her puppies. One dog had ulcerated corneas, resulting in keratocoeles and total blindness. Among the dog-plague cases 4 had epileptiform convulsions.

Seventeen kennels had distemper introduced among their young stock by dogs returned from this show. One of the interesting cases was that of a fox-terrier which was apparently in perfect health and remained so, but when returned to his kennel after a "disinfecting bath," gave distemper to all the young on the place. A number of these died. This case illustrated how infection can escape the eye of the most careful veterinarian. We have also proved by experiments that dogs are capable of transmitting distemper for at least one month after their apparent recovery from the disease.

How long the contagion of dog plague lasts has never been determined, as we can often expose dogs directly to the sick animals without results; and yet at times it will affect every non-immune dog in a kennel and the greater number of those in a show. There is evidently some unknown factor in its transmission. When this is discovered we will know why many shows are not followed by plague while others have such a high percentage of cases following them.

In addition to these diseases, sarcoptic mange and lice are frequently contracted by dogs at shows. It seems to us that the veterinarian is certainly at fault when a mangy dog is permitted to be in a show. We heard of none of these after the Columbus Show.

## REPORTS OF CASES.

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*"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."*

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### AN INTERESTING CASE.

By A. T. KINSLEY, M. Sc., D. V. S., Pathologist, Kansas City Veterinary College.

An investigation of a farm about 100 miles from Kansas City was made to determine, if possible, the cause of an equine disease that had been prevalent there for over a year. It was found that two horses had died during the last year and that two were now affected. The horses had all been used on the farm and were all raised in the immediate community. They had all been kept in the same barn, though in different stalls, fed the same kind of feed (corn, oats, chop-prairie hay, timothy, alfalfa), and given water out of the same well. The feed and water were of the best quality. During the night, rainy days and Sundays the horses were turned into a small pasture in which there was a small creek. The barn was fairly good and was located on high ground from which drainage was ample. The pasture was lowland, well sodded with blue grass, and contained a few large forest trees and a few small brush thickets.

Horses on adjacent farms were not affected, though the farms were separated only by a wire fence in some places, and the creek from the above-mentioned pasture also supplied pasture water to two farms immediately below the one on which the affected horses were found. The same disease was reported on two other farms, one three miles and the other four miles distant from this farm. In fact, the horse that first showed any symptoms on this farm was raised on one of the other affected farms referred to above.

The affected horses became unthrifty, anemic, weak and emaciated, though they had a ravenous appetite. The first two horses were affected for a considerable time, four to six months before they died. Of the two horses affected at the time of the investigation, one was a sorrel mare eight years' old and the other a four-year-old gray gelding. The mare's mucous membranes were very pale and apparently bloodless. Her blood

contained only 30 per cent. hemoglobin; the pulse was weak but regular; the respiration slightly increased; the temperature normal; in fact, the most evident symptom was weakness and it was with difficulty that she was led to a convenient place and destroyed. A careful post-mortem examination was made. The following are the post-mortem notations: General lack of blood; myriads of the larvæ of the *strongylus armatus* free in the peritoneal cavity; mesenteric lymph nodes all invaded with the larvæ of the *strongylus armatus* (some of the lymph nodes contained suppurative foci); invasion of practically all of the abdominal visceral blood vessels with the larvæ of the *strongylus armatus* where they had in most instances produced aneurisms and thrombi; the heart was slightly hyperthrophied. No other lesions noted.

A careful examination of the gray gelding revealed weakness and anemia (65 per cent. hemoglobin) and no other symptoms. A wobbling gait, more evident in the hind legs, was evident, but was thought to be due to weakness. Arrangements were made to send this horse to the Kansas City Veterinary College Hospital, where he was under careful observation from October 11, 1908, to April 1, 1909. Respiration and pulse rate were practically normal during the entire period. The temperature varied from 100° to 101° F. except on the 28th, 29th and 30th of October, when it was found to be 104° to 105° F., but this was the only marked temperature variation during the six months of observation.

A careful study of the blood was made to determine the percentage of hemoglobin, number of red blood cells, white blood cells, and the proportion of the varieties of the white blood cells. The hemoglobin varied from 65 per cent. to 90 cent. It gradually increased until the horse was discharged. The number of red blood cells varied from 4,000,000 to 7,000,000 per cmm., they were irregular in shape for the first six weeks and gradually assumed the normal appearance and were quite regular in shape by February 1, 1909.

The number of leucocytes varied from 6,000 to 24,000 per cmm., averaging 11,130 per cmm. The percentage of the different varieties of leucocytes observed on October 10, 1908, was as follows: Lymphocytes, 27 per cent.; mononuclears, 8 per cent.; polymorphs, 52 per cent.; eosinophiles, 13 per cent.; mast cells, 0 per cent. This was indicative of animal parasitism and the supposition was that the horse was infested with the *strongylus armatus*.

The following are notations taken from the record book: October 13th, horse received one quart of linseed oil in which was incorporated two ounces of turpentine. From October 25th to November 5th, the horse received the following—both morning and night—one quart linseed oil and two ounces of turpentine. Although the horse received five gallons of linseed oil and two and a half pints of turpentine, no noticeable effects were noted on the fecal discharge and no parasites were found in the feces. However, the percentage of eosinophiles diminished from 13 per cent. to 4 per cent and maintained at 4 per cent to  $4\frac{1}{2}$  per cent. until observations ceased.

The horse began to improve in every particular, except the wobbling gait, immediately after the course of oil was completed. Beginning on November 10th and continuing until February 20th, Fowler's Solution was given in two drachm doses twice daily for ten days, then *nux vomica* in small doses twice daily for ten days.

When the horse was discharged he was much improved, in fact the only noticeable symptom when discharged was the wobbling gait. Presumably the larvæ had produced aneurisms and thrombi in the arteries supplying the spinal cord, thus resulting in the imperfect co-ordination. No evidence could be found on rectal examination of diminished blood supply through the iliac arteries, and the pulse of the posterior digital arteries was apparently normal. Possibly larvæ may have passed through the spinal arteries into the neural canal and produced aneurisms and thrombi, which by pressure inhibited or interfered with the motor nerve impulses. Sensation was practically normal in the cutaneous structure of the posterior extremities, even down to the hoof line, thus the disturbance, if of the cord, was of the inferior and lateral columns, *i. e.*, those columns in which the motor nerve cells are located or from which the motor nerve fibres emanate.

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### MYCOTIC LYMPHANGITIS.\*

By DR. W. F. CREWE, State Veterinarian, Devil's Lake, N. D.

Most of the authorities I have consulted do not refer to this disease as occurring in this country, but state that it is found in Japan, Sweden, Finland and France.

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\* Read at the North Dakota Veterinary Medical Association meeting.

It is known as mycotic lymphangitis, epizootic lymphangitis, Japanese farcy and pseudo farcy.

Dr. Mohler states that Dr. Pearson, of Pennsylvania, was the first to announce its existence in the United States in 1907, although, he says, it is possible that it has existed in various parts of the country for some time. Dr. Van Es advises me that he has diagnosed it in Alabama some years ago. Authentic cases have recently been found in Ohio, Iowa, California and North Dakota. It is also present in the Phillipine Islands, Hawaiian Islands and Porto Rico.

Mycotic lymphangitis is a chronic inflammation of the lymphatics and lymph glands in which proliferation and nodular thickening is produced followed later by a purulent softening.

The cause of this disease is a specific organism, the *Saccharomyces farciminosus*. The disease was first discovered by Italian and French veterinarians and the specific organism was discovered by Rivolta in 1873.

According to Mohler, the period of incubation varies greatly, extending from three weeks to four months or longer. In artificial inoculation with pus through wounds in the skin, inflammation and swelling of the lymph vessels may be noticed in twenty to sixty days, which show in their course a development of hard nodules from which abscesses form. The natural infection is presumed to be caused through superficial wounds, such as galls, barbed wire cuts, etc.

It is stated by Law that the infection may be introduced to parts of the body by the harness and affect the back, breast, rump, head, etc. Also, that in variable time (one to twenty hours) from time symptoms develop that the surrounding lymphatics become swollen and tender and nodular swellings appear on their course which fluctuate, burst and discharge a whitish pus. It is also stated that this disease may extend along the nasal passages and larger bronchi and finally invade the lung.

Nocard describes this affection in the horse as characterized by skin nodules (button boils) which burst and discharge a thick gummosus or thin, oily, yellowish or bloody discharge. The surrounding lymph plexus swell up into corded lines with at intervals nodules or abscesses. In my observation some of these nodules were one and half inches in diameter and seemed to be of a fibrous nature with a small focus on the surface exhibiting a granular appearance.

Mohler describes the symptoms as follows: "The inflammation of the lymph vessels is usually first observed in the extremities, especially one or both hind legs; it may also appear on the forelegs, shoulder or neck. The lesions, as a rule, develop in the tissue adjacent to the place of inoculation. In the early stages of the disease the lymph vessels appear very hard and thickened, and along their course hard nodules develop, ranging in size from a pea to that of a hen's egg. Later, these nodules soften, burst spontaneously and discharge a thick, yellowish pus. The surface of the resulting ulcers or abscess cavities soon fill up with exuberant granulations which protrude beyond the surface of the skin, giving a fungoid appearance. The affected extremities are considerably enlarged, similar to cases of simple lymphangitis. The constitutional symptoms accompanying this disease are not often marked or may be absent. There may be a slight fever observed which seldom runs over 102° F. The appetite is not impaired except in the advanced cases."

It appears the diagnosis is based on the characteristic appearance of the ulcerations which show exuberant granulations, inverted edges, and thick, creamy glutinous discharge. These symptoms differentiate the disease from glanders, in which the ulcers are crater-like and do not contain the exuberant granulations. My opinion is that the safest and surest diagnosis will be secured by either applying the mallein test or making a microscopic examination of the pus. Owing to the possibility of confusing this disease with glanders-farcy it is the policy of the sanitary authorities to mallein test all isolated cases that may be found, where there is no history of direct exposure to glanders.

The treatment recommended is the entire extirpation of the nodules and infected vessels in case the lesions are localized. Where abscesses are found they should be opened and thoroughly curetted and the diseased tissue destroyed by actual cautery or a severe caustic. The cavities should be packed with pledgets soaked in tincture of iodine, iodized phenol, creolin, lysol or dusted with aristol, iodoform or similar powder. It is quite important that the parts be thoroughly saturated with a good antiseptic to prevent further infection. Internally, tonics and antiseptics may be given, arsenate of strychnia, quinia, iron and copper sulphate and sodium hyposulphite are recommended.

The following picture is a case of nearly three years' standing, was mallein-tested with negative result. The picture was taken about four months ago and recently the owner telephoned



Mycotic Lympangitis (Pseudo-farcy).

me stating that the leg was breaking down and becoming very offensive and that he was going to destroy her.

NEW YORK UNIVERSITY will hold its seventy-seventh annual commencement on Wednesday, June 2, 1909.

## ARMY VETERINARY DEPARTMENT.

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### TO THE ARMY VETERINARIANS.

On reaching Washington, D. C., from duty with the Army of Cuban Pacification, I called upon an old comrade, now on the general staff, who is the author of the army veterinary bill now before Congress.

In reference to this bill he made the following remarks—in substance, which he kindly authorized me to use as I might deem proper :

“The War Department looks with a friendly interest upon the army veterinarian and his progress in the service.

“When the present veterinary bill was in process of preparation we had the welfare of all in mind, particularly that of the older men whose years of faithful service entitles them to every consideration the department can give them.

“For this reason it was arranged that they should be exempt from examinations, recognizing, as we did, their hard, uncomplaining service and their valuable knowledge, gained in the rigid school of experience if no other. The younger men, we felt confident, would be able to pass the examination contemplated, and you must ever remember that the spirit of the service is not a harsh one but is always inclined to generous consideration for its faithful members.

“We do not think that there should be any objection on the part of the younger men, graduates of leading veterinary colleges, as you inform me, to these examinations, seeing that all promotions nowadays, except in case of very high ranking officers, is by examination. Examinations must always remain, and properly, too, a feature of any veterinary bill receiving the sanction of the War Department.

“In the present bill we did not make provision for disability for the reason that we did not know at the time it was framed that any of the younger men were disabled. Had we known this we certainly would have given it consideration.

“In this connection I would suggest that veterinarians who believe themselves unfitted for service through disability contracted in line of duty notify the War Department through mili-



tary channels, citing their cases, accompanied by the necessary data. I assure you they will be given consideration.

"Now, as to your suggestion for a different bill (organization and rank), I will candidly say that the Department is not now inclined to give it favorable consideration. I know you will have to be satisfied with what the Department is willing to give you now. When that is accomplished, it looks to me that an effort could be made to obtain the organization and advancement you mention.

"It must not be forgotten that military matters make progress slowly with us and that it is difficult to persuade Congress that many things asked for and refused are absolute necessities from our point of view. It is needless for me to ask you to look back twenty years or more and remember what a struggle we have had for the little we have gained. Take your own case, for instance. You have had a hard fight for the little you have received. The difference of opinion among yourselves must cease if you desire to be successful in your efforts for betterment, and you should make an effort through your association, or other authorized means, to have the present bill become a law next session of Congress.

"I regret very much indeed that we did not know of the disability of those of whom you spoke, before the present bill was framed, but it is not too late yet.

"You have my authority to convey these expressions to your confrères and to say to them that this Department has their interest at heart as much as it has any other branch of the service.

"You know the Department is in favor of the present bill, and sincerely hopes to see it become a law, and I believe it will."

NOTE.—The above is the gist of a long conversation on the subject near to our hearts. I think there is material for reflection in it. I have spoken on this subject with many others in Washington and their opinions were about the same.

GERALD E. GRIFFIN,

Veterinarian, Third F. A.

FT. D. A. RUSSELL, WYO., May 11, 1909.

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THE North Carolina State Board of Veterinary Examiners meets for examination of candidates July 2, 1909, at Wilmington, N. C.

## ABSTRACTS FROM EXCHANGES.

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### ENGLISH REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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DENTIGEROUS CYST IN TEMPORAL REGION [*T. M. Inglis, M. R. C. V. S.*].—Under this title the writer relates the case of a well-bred Clydesdale gelding, two years old, which had an abnormal formation beneath the near ear which was about the size of a billiard ball. There was a fistulous tract with nasty foul-smelling pus. The animal was cast, the cyst opened and a well-formed tooth exposed, with its characteristic whiteness. It was necessary to break it so as to remove it, which was quite a difficult task on account of its condition and hardness. However, this was finally accomplished and the lining of the cyst, which was also bony, was also removed. Portions of the skin had to be excised so as to make the edges of the incision perfect. This is the first time such discovery is observed by the author. Although, says he, castrating cryptorchids frequently he has often met with dentigerous abdominal cysts and has also observed them in the facial sinuses, more particularly the frontal. He has also noticed that fillies presented these abnormalities more frequently than colts.—(*Veter. Record.*)

CARCINOMA [*E. Wallis Hoare*].—Cob gelding, 18 years old, has a tumor situated in the region of the frontal sinuses and extending up the parietal region. Soft to the touch, slightly fluctuating in the center, it is pyriform in shape. The skin covering it is thin and hairless. The tumor has been growing for ten months. Exploring needle pushed into it shows its great vascularity. An incision on its middle shows that it is formed of material resembling cerebral substance with thin, soft portions of bones in its depth. At the request of the owner an attempt was made to remove it; but its base being found composed of cartilaginous material, there was evidence certain that the cranial cavity would be entered by further interference. The operation was stopped and the wound dressed. After a few

days the animal died. Examined under the microscope, the tumor was found to be a carcimona with formation of abundant dense fibrous tissue.—(*Ibidem.*)

ALBINISM [*V. de V. H. Woodley, I. C. V. D.*].—In relation to information asked for regarding albinism, the author sends a few rough notes on some animals of the Lahore Zoological Gardens which may prove of some interest.

1st. A white buck. The hair of this animal is totally white. The skin on those places where hair does not grow is pink. The eye is not pink, as may be expected, but dark in color, the pupil being of a light blue and the iris almost black. The animal was mated with ordinary does of his own breed and the progeny was lighter in color than normal. He was allowed to top one of his own daughters, the result being an albino.

2d. A white jackal (male). Coat pure white, skin of muzzle and paws pink, eyes almost the same as previously described in the buck, but appear to be affected by the sun, as they are generally kept half closed. No experimental breeding has been tried with the jackal.

3d. There is a pure white peacock in this garden. When crossed with the ordinary wild peacock about 40 per cent. of the young are pure white. Endeavors were made to breed from this white cock and one of the white hens, but the experiment failed.—(*Veter. Record.*)

CHOKING IN COWS [*J. Donaldson Pottie, M. R. C. V. S.*].—The writer considers that in relation with what has been written on the subject, it may not be out of place to mention a matter which, if known to many veterinarians, has been overlooked in the discussion, which has taken place lately on that question. It is the external application of heat in difficult cases of cervical obstruction of the œsophagus. Fomentations and poulticing to the neck, he has found much advantageous, in obstinate cases and he recalls one in which he used the trocar and canula to pierce the rumen to prevent suffocation and in which the obstruction could not be removed for three days; although probang, oil, belladonna, etc., were tried daily. Hot water fomentations and poultices saved the animal, as on the third day only, he was successful in displacing the obstruction with the probang. He has used the same treatment with similar results in horses and considers it superior in cases of spasmodic contractions of the œsophagus.—(*Veter. News.*)

FOUR COMPLICATED CASES OF STRANGLES [*J. Martin Ries, V. S.*].—When an outbreak of strangles, says the writer, commences in the pharyngeal region, it is common for all susceptible animals in the same stable to become affected in a similar region. Then he follows by the description and the indications of treatment in such cases with the possible mild complications and then those of more serious nature, amongst which he selects four of the cases which he had to deal with. The first is a filly of 12 months. She began her sickness with an abscess in the pharyngeal and subparotid regions. She died rapidly with lesions in the affected regions, the guttural pouches, purulent pleuritis, pericarditis, pneumonia and abscesses in the stomach and abdominal lymphatic glands.

Case No. 2.—Mare, 8 years of age, in same stable as the first, dying with solidification of both lungs with abscesses, purulent peritonitis, multiple mesenteric abscesses, ruptured stomach not connected with the strangles.

Case No. 3.—Three-year-old colt, has had colicky pains, constipation, submaxillary abscesses. Later had pelvic abscesses. Died. Post-mortem: Purulent collection in the pelvic and posterior abdominal regions. About 50 mesenteric abscesses. Intestinal organs give out a very foetid odor.

Case No. 4.—Two-month-old colt. Submaxillary abscesses and later abdominal disturbances. Death. Pus is found oozing from the right ear. Incision of the forehead gives escape to pus. Watery collection of pus in the cranial cavity. Guttural pouches contained caseous pus. Mesenteric glands with abscesses.—(*Veter. Journ.*)

HERMAPHRODITISMUS VERUS LATERALIS IN SUS SCROFA [*B. F. Kingsbury*].—External genital were those of a male. Penis was normal. Perineum presented well-developed ridge, suggesting the vulva of a female. Internal organs indicated strongly that it was a case of true hermaphroditism. There was a usual small corpus uteri with two relatively long uterine horns. Cornua, corpus cervix and vagina had a lumen. There was no orifice vaginæ. No trace of testis, epididymis or vas deferens were on the left side. But on the right there was an evident testis, with epididymis and vas deferens. There was a little body on the left side, the ovary, which was not present on the right. The microscopical examination confirmed the diagnosis.—(*Veter. Journ.*)

NOTES ON ACONITE POISONING [*R. C. Moore, C. A. V. C.*].—Relating a few notes on the subject, with mention of the symptoms: Frothing at the mouth, arching of the neck, anti-peristaltic action of the œsophagus, similar to those of choking, staggering gait, colicky pains, delirium and death. Early treatment of hypodermic injections of physostigmine, followed by one of sulphate of atropia twenty minutes later, was usually successful, if carried out early. Post-mortem: The lesions consist in those of gastro-enteritis. To detect aconite in drinking water or in the contents of the stomach: Slightly acidulate with few drops of acetic acid, if aconite is present a red crystalline precipitate will be formed on adding a few drops of a solution of permanganate of potassium.—(*Ibidem.*)

THREE ILLUSTRATED INTERESTING DENTAL VARIATIONS [*R. E. Holding*].—1st. Case of supernumerary upper incisives in the horse. There were nine incisives, two supernumerary and one retained deciduous tooth. By the illustration, it appears as the two nippers are the normal ones, on each side of these there were two teeth which look like dividers, the deciduous tooth was on the left side between the divider and the corner tooth.

2d. The jaw of a zebu shows a rare variation, viz., the complete reversal of the position of the lateral incisors, the inner face of the tooth having become the external.

3d. The jaw of an ox in which the teeth are very irregular and overlap; some being set well forward, others backwards. The jaw had been the seat of an extensive fracture.—(*Veter. Journ.*)

SUCCESSFUL HYSTEROTOMY ON A RUPTURED BITCH [*Arthur Payne, F. R. C.*].—This Dandie Dinmont bitch was operated once for left inguinal hernia and recovered. Four weeks later she had another hernia on the right side which soon was as big as a goose's egg. The dog was covered accidentally and finally a foetus could be detected in the hernial sac. Natural length of time was allowed for delivery and then she was operated with the Cæsarian operation, fortunately only one foetus (dead), being present. It was found impossible to reduce the hernia at that moment and decided to wait for the cicatrization of the uterine wound, when the author hopes he may have another chance to reduce the hernia.—(*Ibidem.*)

HEART DISEASE IN A DOG [*R. F. Stirling, M. R. C. V. S.*].—Four-and-a-half-year old pointer, pet of a lady, died in playing with children. P. M.: All the organs healthy except the heart, which has the edges of the cups of the mitral valve markedly thickened and shrunken, but without verrucose condition. Is not such lesion rather unusual in a dog of that age?—(*Ibidem.*)

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## FRENCH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

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RUPTURE OF THE BLADDER IN A STEER [*Mr. Trillaud*].—This animal was ailing for one day, having colics which, being treated by an empiric, failed to be relieved. Quite in good condition he has refused all food, ruminates no more, he grunts when made to move and looks very dull. The nose is dry and the conjunctivæ congested. The horns are warm; there is a little tympanitis. In the presence of such condition, indigestion is suspected and the animal treated accordingly. After two days, beyond the fact that he has passed manure and water, he is in about the same condition, there is no improvement and after a few days the owner decides to send him to the butcher. At the post-mortem, the thoracic organs are found healthy. In the abdomen, the rumen and the omasum are packed with hard, dry food, the bladder was intimately adherent to the intestines and to the walls of the pelvis. It was ruptured and had allowed its contents to escape in the abdomen where an enormous quantity of fluid had accumulated. Yet the meat had no bad smell of urine. The external face of the bladder was blackish near the place of the rupture. Large clot of blood was also present in the vesical cavity. No calculus were found in any part of the urinary apparatus.—(*Revue Veterin.*)

CASTRATION OF CRYPTORCHID BOARS [*Mr. H. Gavet*].—Adult pigs affected with cryptorchidy on account of the peculiar odor and bad taste of their flesh must be operated. By the flank, as young sows when they are between one month and six weeks old, but when they are older, adult, say eight months or more,

the only possible way is with laparotomy. The author relates the case of a ten months' old porker which had a strong smell of urine about him, was ugly when with other animals, and though he had two cicatrices indicating that he may have been castrated, yet was considered as cryptorchid by the owner, who takes all the risks of an operation. Properly secured in a dorsal decubital position, the skin was closely shaved and washed with boiled water and peroxide, the abdomen was opened by an incision, width of two fingers on one side of the median line along the penis and parallel to it. Two fingers, introduced in the abdomen, soon detected the testicle which was as big as the fist of a man and required greater dimensions of the abdominal opening. The incision was made a little longer, the testicle taken hold of with the hand brought out and removed with the ecraseur. Peritoneum, muscles and tunica abdominalis were sewed together with one catgut suture and the skin with another. No further care, except clean bedding. Recovery in a few days. Killed after six weeks, the body weighed 118 kilogs. All smell of urine had disappeared. The meat had the aspect and taste of all normal meat. Cryptorchid pigs ought no longer be seen on market stands or in slaughter houses.—(*Rev. Gene. de Med. Vete.*)

**TORSION OF THE UTERUS IN A SOW—RELAPSE—RECOVERY** [*Mr. Th. Zeer*].—Since a few hours a pregnant sow makes violent efforts and is in great pains. The hand introduced with difficulty in the vagina revealed an uterine torsion to the left. The index finger introduced in the folds reaches the lower jaw of the foetus but cannot go further. The animal is secured and rolled as is usual in such cases. After several turnings the lower jaw of the foetus can be secured with nippers, the torsion disappeared and a dead foetus is easily extracted. Exploration shows that the passage is clear and free and another foetus is felt in the right horn. The animal is left to her natural process of delivery. But after waiting two hours she is again taken with pains, she has not delivered, the torsion has returned. Second operation of rolling and soon the trouble is removed and a second dead foetus is taken away. Afterwards the sow delivered six living young ones. As sequelæ the animal had metritis complicated after a few days with loss of appetite, loss of milk and by a peculiar well-marked burning, itching of the entire croup as far as the loins. Not knowing exactly what was the trouble, the writer advised to let the animal go out in the field close by

and where a little marshy river ran. As soon as the sow was out she ran to the water, drank freely and laid down in the river, where she was left for half an hour. This she repeated every day until she laid three and four hours in her bath. Her condition improved, her appetite that had gone returned and she soon was fat enough to be killed.—(*Presse Veterin.*)

TREATMENT OF CONTUSED AND EXTENSIVE WOUNDS OF THE HEAD [*Messrs. Tatte and Vielly*].—A mare has been the victim of an accident and has received severe injuries. She carries her head low down and the forehead and poll are the seat of a large swelling. Her temperature is only 38 degrees. The most important wound has an angular form. Starting from the summit of the head it runs towards the poll, backwards of the occipital protuberance and extends forwards on the median line until it reaches near the left eye. The skin is loose and retracted and the wound is some 10-15 centimeters wide. The left ear is drooping, the temporo-auricular muscles partly divided. The crotaphite muscle is infiltrated, blackish and lacerated. This muscle on the right side is torn. The parietal bone is exposed, broken off, and pulled backwards by the ligamentum nuchæ. There is also a small wound near the left eye. The frontal bone is fractured and the sinuses are open. Treatment: Injections of anti-tetanic serum, disinfection of the wounds, washing with tepid cresyled water, solutions of sublimate or permanganate, peroxide or boric acid powder as indications direct them, protecting dressing. The suppuration has become abundant and of bad nature. After one month's treatment a swelling appears on the superior border of the neck, necrosis of deep tissues is suspected and a free incision is made. From that time, free washings and injections in the wound of a solution of water containing phosphate of sodium, bicarbonate of soda, and chloride of sodium are resorted to and with them the general aspect of the wound is improved, suppuration modified, swelling passes away and finally complete recovery is obtained.—(*Journ. de Zootech.*)

PARALYSIS OF THE ANTERIOR TIBIAL NERVE AFTER AN ATTACK OF AZOTURIA [*Mr. Freger*].—After being laid up with azoturia a few days, this horse improved and presented the following symptoms which made the author diagnosticate "Paralysis of the anterior tibial nerve." When brought out of the stable the aspect of the animal showed a great stiffness behind. Standing at rest there is nothing peculiar, the animal stands



plumb on the plantar surface of both hind feet. In walking, the troubles of the locomotion are readily observed. When the leg is about raised from the ground, the tendo achillis becomes relaxed, flabby and presents wrinkles well marked on its middle. The cannon bone remains hanging and freely oscillating and instead of being flexed on the tibia, is extended backwards nearly as a prolongation of that bone. The leg then arrives at the resting position. What has occurred in one leg takes place in the other. In trotting, the symptoms are still more marked and the gait of the animal is very curious. It seems as if the hind legs, remaining behind, were drawn towards the body, so great is the extension of the cannon upon the tibia. It must be remembered that in all the motions the raising of the foot from the ground was always difficult. No treatment was applied. The animal was kept to work. The symptoms remained the same for six months except in the right side where they disappeared much quicker.—(*Journ. de Zootech.*)

NEW OBSERVATION OF LYMPHADENOMA OF THE PRESCAPULAR AND ANTERIOR MEDIASTINE LYMPHATIC GLANDS IN A MARE [*Mr. L. Bretegnier, Army Vcter.*].—Aged ten years, this mare is reported as not in condition. She is dull, has lost her appetite, works poorly and sweats abundantly after a short trot. She presents a marked hypertrophy of the prescapular lymphatic glands, which on each side of the jugulars appear as painless tumors, slightly bosselated and loose. The veins and the original branches are gorged with blood and raised under the skin. The visible mucous membranes are cyanotic. There is a small swelling under the chest and sub-sternal regions. Auscultation of the heart is negative. Diagnosis is made of a tumor at the entrance of the chest and the prognosis is serious. Placed on observation the symptoms soon assume a more serious aspect. The appetite is all gone. The deglutition remains normal. There is no ptyalism. The swelling has increased under the chest and goes up the neck. The animal has a very severe crisis of asphyxia and died. Abundant escape of yellow serosity takes place as the swelling of the chest is cut through at the time of the post-mortem. The prescapular lymphatic glands form a bilobulated tumor, pressing upon the trachea, œsophagus, carotids and jugulars. They are continuous to an enormous neoplasm which weighs 5 kilogs 100 grams and fills the space between the two first ribs, then extends to the pulmonary lobes, passes over the

heart in pressing over the auricles and goes to be attached to the pericardium and costal pleura. In the mass of this growth, organs, blood vessels and nerves of the thoracic cavity are more or less involved. It seems of recent formation and examined with the microscope sections of it prove it to be a lymphadenoma. The liver was hypertrophied and weighed 8 kilogs 500. The spleen was also enormous and weighed 6 kilogs 700 (splenomegalia). The ovaries were also hypertrophied. Other parts of the organism comparatively healthy.—(*Recueil de Medec. Veter.*)

INVAGINATION OF THE ILEUM IN THE CÆCUM IN A MARE [Mr. Pruneau and Mr. Castaing, Army Veter.].—This animal has been subject to colics. These are never severe and have readily yielded to treatment. This time she exhibits similar symptoms and after an opiate drench is relieved. She remains apparently well until late in the day when the colics return and rapidly increase in severity. Conjunctiva are injected, pulse small and thready, respiration short and hurried, no tympanitis. The animal looks towards her right flank, throws herself down and assumes a dorsal decubital position, where she seems to find some relief or at least some ease. Rectal examination is negative. In the middle of the night she dies. Post-mortem: Sero-bloody effusion in the abdomen. Stomach largely distended and containing but little food. The last portion of the small intestines is invaginated in the cæcum and the invagination protruding in that cavity measures about 4 meters. There is a strong constriction at the cæcal entrance and a fold of the mesentery surrounds the small intestines at that point somewhat strangulating it. The invaginated portion is thickened, softened and in a state of partial mortification. There was also a small tumor on the invaginated intestines as big as a hen's egg, which was certainly the cause of this rare accident.—(*Recueil de Medec. Veter.*)

HYGROMA AT THE POINT OF THE STERNUM [Mr. A. Louis].—Prof. Moussu has written that such cases were rare. On this account the author recalls this case which he has observed in his practice. Normand cow, in pregnancy, in excellent condition, has at the point of the sternum a semi-spherical tumor, painless, fluctuating, and large enough to interfere with locomotion. It has been punctured once and yellow fluid has escaped, but the puncture has closed and the growth has returned. An aseptic puncture is made and followed by a free incision. After the escape of all the fluid an injection of solution of iodine was made and quick recovery followed.—(*Ibid.*)

## ITALIAN REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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DISLOCATED MOVING CRYSTALLINE LENS IN A CAT [*Dr. Nello Mori*].—Old common-bred cat presented an abnormality of the right eye. In the anterior chamber there is a foreign body moving with every motion of the eye and having no adhesion with the surrounding structures. The pupil is widely dilated and remains insensible to the effects of strong light thrown in the eye. The foreign body has the form of a lens with convex surfaces, and the borders rounded. It is opaque, white in color and has a tendency to become more of a spherical shape. On account of the dilatation of the pupil, it can travel in the eye without touching the pupillary margin. Convinced that it was a dislocation of the crystalline lens the author did not examine the eye with the ophthalmoscope but resorted to the test of light according to the method of Purkinge-Sanson to control his diagnosis. The other eye was normal. After examining the same cat three days after it was observed that the anterior chamber was clear. The lens had disappeared. Had it been absorbed, or passed in the posterior chamber? Another Purkinge-Sanson test proved that it was not certainly in its normal position. At any rate, it was not absorbed, as a short time later the crystalline lens was again found and still floating in the anterior chamber.—(*Il Nuovo Ercolani*.)

PRIMITIVE SARCOMA OF THE KIDNEY IN A CAT [*Dr. Giovanni Vallillo*].—While the cases of observations of tumors of the kidneys in the domestic animals are quite frequent, the author remarks that he has failed in finding a single case relating to cats. The case which he says was published by Prof. Petit, of Alfort, referred to one animal which had previously been operated for a tumor of the mammæ and probably the lesions found at the post-mortem were secondary tumors. For his own case, the animal had died from catarrhal gastro-enteritis, of which he had all the lesions with, besides pathological condition of the kidneys, which he describes as one of the globo-cellular sarcoma with small round cells.—(*La Clin. Veterina*.)

UTERINE PERFORATION BY THE PENIS OF THE MALE DURING COPULATION IN A HEIFER [*Dr. Raggero Fracaro*].—Only 18 months old, this young animal, rather of a delicate build, was covered by a strong and very robust bull. After being served, she looked dull and returned to her stall in walking slowly, a few meters away. In that short journey about one tablespoonful of blood and the dripping of a few drops after were passed from the vulva. She manifested some pains, defecated and urinated quite repeatedly. She refused all food, and did not take any drinks. When the writer visited her she was in about that same condition, had no fever and her pulse was fairly good. But rumination had stopped entirely. By vaginal exploration, only a little clot of blood was noticed on the anterior half of the vagina. Observing nothing else apparently abnormal, the condition was considered as the result of a first coit and the animal was left alone and watched. Soon, however, the condition seemed to grow worse, the symptoms became alarming and finally it was decided to send the animal to the slaughter house for the butcher. At the dressing of the carcass the uterus was found containing a large clot of blood partly firm and partly in state of decomposition. The mucous membrane was impregnated with coloring substances giving it a bluish aspect. Outside the uterus, near the border of the broad ligament, there is a clot of blood also quite large. There was on the superior wall of the uterine neck a solution of continuity some 4 centimeters long which involved the mucous and muscular coats. The peritoneal covering of the organ was intact. This solution of continuity, quite small, was concealed by the folds of the uterine mucus. It was quite difficult to discover it at first.—(*La Clin. Veterin.*)

MEDIAN CHEILOSCHISIS [*Dr. Oreste Fantin*].—Harelip is not as common in solipeds as in some other species, hence the following may be of interest. The subject was an old horse which on account of excessive lameness by spavins was about to be destroyed. The peculiar aspect of the upper lip called the attention of the writer. It was divided on the median line in two equal symmetrical halves which, while they hang down over the lower lip, left between them in the middle a triangular empty space. The lip had its perfect motions. The upper maxillary had also its incisive teeth but the nippers were not close to each other; they were separated by a space of about 2 centimeters,

which was occupied by a mucous membrane much thickened, hard and resembling that of the upper jaw of cattle. The six teeth were there, but their arrangement had made the dental arch of the lower jaw also the seat of irregularity and the teeth met in forming a much inclined plane. The inferior teeth did not seem to have the same hard structure and the motions of mastication were executed more like that of cattle, that is from side to side instead of from upwards downwards.—(*La Clin. Veterin.*)

A MEMORIAL TO THE LATE PROFESSOR WITHERS.—Richard J. Withers, M. D., V. S., the subject of the bust portrayed elsewhere in this issue, was born in Luxboro, Bornsey, Hampshire, England, August 9, 1835, and died at Los Angeles, Cal., May 15, 1904.

In 1883, with Joseph Hughes, M. R. C. V. S., and Austin H. Baker, V. S., he organized the Chicago Veterinary College, becoming president of the institution and retaining this position until his death. He so endeared himself to the students of the college that a popular movement has been started by the alumni to erect a permanent memorial to him. This movement has resulted in the creation of the bust, the plaster cast of which is at present at the college in Chicago, where it has been submitted for the criticism and consideration of the faculty and alumni. It is hoped to raise enough money by popular subscription to have this reproduced in bronze and placed permanently in the college.

The bust is the work of Herbert M. Dawley, of Buffalo, N. Y., and is pronounced by those who have seen it as being an unusually faithful reproduction of the features of the former president. This is especially noteworthy in view of the fact that the subject was wholly unknown to the sculptor, he being forced to work entirely from three photographs loaned by Drs. Sayre and Ulm, and from criticisms and suggestions offered by Dr. Frank A. Crandall, curator of the Buffalo Zoo, Dr. George A. Lytle, inspector of meats, United States Army, and Dr. E. J. McLeod, general practitioner, all of whom reside in Buffalo at present and were students under Dr. Withers.

The bust will be in Chicago during the meeting of the A. V. M. A. in September, and it is hoped that all those who are interested in this movement will take advantage of the opportunity to inspect the work. Any suggestions, criticisms or comments will be gladly received by either Prof. Hughes, Dr. Crandall or Mr. Dawley, the sculptor.

## CORRESPONDENCE.

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### THE APPROACHING MEETING OF THE A. V. M. A.

Confronted with the realization that time will permit of but two more chances to place before the readers of the AMERICAN VETERINARY REVIEW thoughts of the approaching forty-sixth annual convention of the American Veterinary Medical Association, and that it is time to culminate our plans to spell ourselves from the routine and exactness of business to journey to the meeting in Chicago during the early days of September, I am prompted to solicit space, thus endeavoring to stimulate general interest and co-operation; this that, working hand in hand, veterinarians may collectively aid towards making the approaching meeting the greatest ever.

Situated in a geographical centre, Chicago, with its multitudinous facilities towards furnishing entertainment, naturally lends stimulus to a determination to attend the approaching international (Canada and the United States) convention. Let us not, however, allow entertainment to act as the only stimulating force, but recollect that there will be representatives from the entire North American continent, thus affording opportunity for reunion, for lending further strength to the fraternalism that even now binds the practitioners of the adjoining countries, for opportunity to broaden the scope and enhance the value of our veterinary services by observation, discussion and by seeing or aiding in the practical demonstrations; indeed, all this is amply guaranteed by the environment of the local stock markets, abattoirs, facilities for both pathological exhibits and clinical demonstrations and further by the literary attractions planned and accessible for the hours of convention week.

The state, provincial and municipal veterinary organizations, appreciating the worth and important character of these great international meetings, have selected delegates to the convention. This mingling with men of local and international repute it is anticipated will create an enthusiasm which will be carried back to the home bodies where many valued thoughts, observations and advances gathered through attendance with this greatest body of veterinary surgeons ever assembled in annual con-

vocation may be discussed, extolled and spread broadcast. Although it is believed that later meetings of the subsidiary bodies will further swell the delegate list we have at this writing knowledge of the following official delegated representatives:

Bureau of Animal Industry, Veterinary Inspectors' Association—Dr. A. L. Faunce.

Central Canada Veterinary Association—Drs. W. C. McGuire and A. E. James.

Chicago Veterinary Society—Entire membership not affiliated with the A. V. M. A.

Indiana State Veterinary Association—Acknowledges invitation and promises a big delegation.

Keystone Veterinary Medical Association—Drs. J. W. Vansant, A. W. Ormiston, Chas. Lintz, Thomas Kelly and Stephen Lockett.

Maine Veterinary Medical Association—Dr. A. L. Murch.

Michigan State Veterinary Medical Association—Dr. T. G. Duff.

Veterinary Medical Association of New Jersey—Delegates to be named at the Atlantic City meeting in July.

North Dakota Veterinary Association—Drs. E. J. Walsh, C. H. Babcock, W. S. Stinson and C. H. Martin.

Ontario Veterinary Association—Dr. E. A. A. Grange.

Pennsylvania State Veterinary Medical Association—Drs. Bradley, G. G. Blank and F. H. McCarthy.

Schuylkill Valley Veterinary Association—Drs. D. R. Kohler, W. G. Huyett and O. G. Noack.

St. Louis Society of Veterinary Inspectors—Drs. T. B. Pote and Henry Burke.

Texas Veterinary Medical Association—Drs. T. W. Matson and A. H. Wallace.

York County Veterinary Medical Society—Such members as attend will act as the official delegates.

The program, as yet far from complete *and even now earnestly calling for more literary contributions*, presents attractive features—a session for the reading and discussion of papers contributed by members of the committee on diseases, the subject-matter being mainly rabies, pernicious anæmia (swamp fever), and a general discourse upon American animal diseases, their control and recognition.

The committee on intelligence and education will lay before the convention information pertaining to that important feature

of modern veterinary science: improved educational and advanced sanitary control problems; these, though perhaps bore-some in detail, are assuredly of no little importance to the present as well as the future veterinary surgeon. Are they not the substantial stepping-stones in the uplifting and opening opportunities of our science?

The topic of the day, "pure and wholesome milk," goes not unrecognized. A session will be devoted to this all-important and opportunity offering branch of modern veterinary science. We as veterinarians need this valuable instruction to adequately prepare ourselves to intelligently talk upon the subject and to competently fill places now all too frequently ignored by us and commonly occupied by laity unskilled with animal disease problems.

These features, though speaking volumes, are not all. Those in attendance will have occasion to listen to and to discuss papers that assuredly will appeal to the ambitious practitioner. They are offered by such men as R. A. Archibald, of California; W. B. Craig, Indiana; F. F. Brown, Missouri; G. H. Glover and B. F. Kaupp, of Colorado; F. S. Schoenleber, Kansas; William Herbert Lowe, Associate Editor of the *AMERICAN VETERINARY REVIEW*; H. F. Palmer, Illinois; J. W. Parker, Texas; E. A. A. Grange, Ontario, and, unquestionably, many other contributors dilatory in announcing their intended contributions which will be filled with valuable and interesting information.

The social features, sight-seeing trips, renewed acquaintances, reception and banquet, with ladies included, should by no means be ignored; the local committee of arrangements will make these sufficient to cause comment should we abstain from attendance.

But after all has been said, let us analyze upon and admit the purport of this preliminary announcement. We want all veterinary surgeons, members and others, to plan to attend the great meeting. You don't have to be members, but, none the less, we do most energetically urge you to become so if possible. Why? Principally because your membership will lend materially in the further upbuilding of your chosen calling and opportunity-offering profession; it does not matter if you are in the army, federal meat inspection service, a municipal officer, practitioner or what not, we need you, and hope that our force and power for good is sufficient to demonstrate that you need us. The annual dues are small, the benefits great—prestige, broadened fellowship, valuable free publications, advanced but



sound ideas, professional progressiveness, opportunity to influence public opinion, etc.

If you contemplate membership do not hesitate, and early application will greatly facilitate and lighten the burden of work of the secretary, which naturally increases as the time of the convention approaches.

Come, veterinarians, meet your Canadian, your United States confreres. We are determined that we need you, and, to reiterate, honestly believe that you can be materially benefited by fellowship in the A. V. M. A., the largest organized body of veterinarians in the world, but not as large or yet as influential as American veterinarians should make it. We trust that the force of this assertion will appeal to members as well as non-members, and in closing bid you all a hearty welcome to our deliberations and thus early to permit you to make your plans for Chicago.

RICHARD P. LYMAN,  
Secretary.

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### A PREJEVALSKY COLT.

NEW YORK ZOOLOGICAL PARK, NEW YORK, May 10, 1909.

*To the Editors of the AMERICAN VETERINARY REVIEW:*

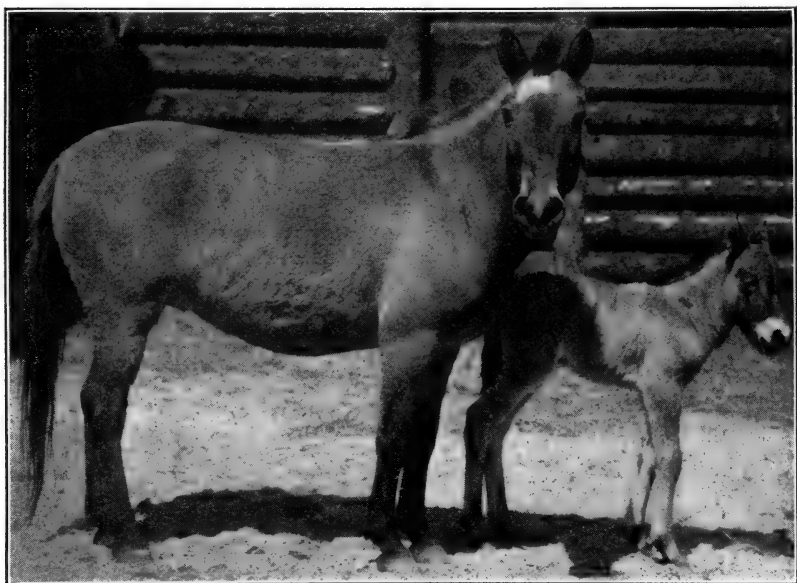
DEAR SIRs—I enclose a photograph of the first Prejevalsky colt born in America. This interesting event occurred on May 2d, and had been anxiously awaited for a number of days. Happily the mare foaled without assistance.

The Prejevalsky horse is of special interest owing to the fact that it is the nearest approach among wild horses and zebras to the domestic horse of civilization, and also supplies an important link in the chain of evolution which reaches down from the three-toed horse to the domestic animal of to-day.

The Prejevalsky wild horse comes from the great Sungarian Desert, in Central Asia, and is a recent discovery of a Russian explorer named Prejevalsky.

Owing to the remoteness of the region inhabited by this species and the fact that they keep to the wildest part of the desert, and are very hard to approach, the capture of these animals is a matter of great difficulty and expense. The cost of a pair delivered in America is about \$5,000.

In appearance the Prejevalsky horse is somewhat smaller than the domestic horse. It also differs from the typical equus in having a short, erect mane, and in having no forelock. The long hairs of the tail, instead of commencing at the base, do not begin until half way down the tail. In this respect the Prejevalsky horse is intermediate between the true horse and the asses. The whole general color is



of a yellowish drab, paler and whitish beneath, and reddish on the head. The legs are reddish-brown to the knees and thence blackish to the hoofs.

While the animal is of small stature, under fourteen hands, the legs, however, are thick and strong and the head is large and heavy.

Respectfully yours,

W. REID BLAIR.

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THE Board of Review of the National Trotting Association held its semi-annual meeting in the Murray Hill Hotel, New York City, last week.

## SOCIETY MEETINGS.

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### MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

Meeting was called to order by President Amos, at 10 A. M., January 13, 1909, at the Merchants' Hotel, St. Paul.

Roll call showed that there were fifty members present. The minutes of the last meeting were read and approved.

President Amos then presented the following address:

#### PRESIDENT AMOS' ADDRESS.

Members of the Minnesota State Veterinary Medical Association—Another new year has been entered upon. We, as part of the people of the busy world, would enter to-day on duties and work of the coming twelve months towards the advancement and betterment of the veterinary profession.

The prospects ahead of us are bright, infinitely better than at the entrance of the year that has just come to an end.

Great advancement has been made along scientific lines, aerial, submarine, terrestrial, and professional.

With the continuance of bettered conditions, 1909 should fulfill the wishes that have been made for a prosperous and a happy New Year.

The past twelve months have been eventful ones; 1908 has made more history than most years of the decade; the new year just entered upon, especially the first two months, it will be well to watch. Elections are over, legislators have met, and it behooves our legislative committees to be ever on the alert to see that no deleterious legislation is sprung on us and allowed to become law without due consideration for the welfare and benefit of the veterinary profession.

New legislation and increased appropriations will be asked for, both for our laboratory work and our live stock sanitary board.

The laboratory for experimental work and for the propagation of hog cholera vaccine, the live stock sanitary board, so that they will not be crippled in the future, financially, as they have been in the past.

By using our influence with the legislators from our respective districts, we can have them prepared for the project when it is introduced on the floor of the legislature, have them posted and their support secured in advance of the vote on the respective bills.

We have had outbreaks of contagious diseases during the year, but, owing to the advancement of veterinary science and the better facilities of handling the outbreaks, the infection, to a certain extent, has been controlled.

A noteworthy fact, as demonstrated during the past year, is the efficiency of hog cholera vaccine; demonstrations have shown that hog cholera in the future can be successfully handled and that the loss is comparatively small where vaccination has been resorted to.

We are here to do business as well as to become better acquainted with the members of our own profession in our own state, and for social intercourse and entertainment.

Your board of directors, after considering the matter, decided to call the meeting of the first day, at nine o'clock in the forenoon instead of afternoon, so that we could get through with our election of officers, etc., and not need to hold a night session.

The time of the night session to be given over to a banquet at the Merchants' Hotel the first night.

With these few remarks, I will take up no more of your valuable time, having quite a lengthy and instructive program ahead of you.

#### TREASURER'S REPORT.

The Treasurer was called upon for his report, which he gave as follows:

|                                         |          |
|-----------------------------------------|----------|
| July 10, 1908, balance in treasury..... | \$190 11 |
| Initiation fees .....                   | 27 00    |
| December 7, annual dues.....            | 50       |
|                                         | <hr/>    |
|                                         | \$217 61 |
| January 9, 1909, disbursements.....     | 64 35    |
|                                         | <hr/>    |
| Balance in treasury.....                | \$153 26 |

It was moved, seconded and carried that this report be referred to the Finance Committee.

A report on bacteriology was read by Dr. W. L. Beebe, which proved to be very interesting.

"The Use of Aconite in Inflammatory Conditions," by Dr. D. M. Campbell; "The Use of Tuberculin in Man," by Dr. H. L. Taylor, and "Acute Laminitis," by O. C. Selby, M.D.C., were papers of much merit. J. N. Gould, M.D.C., presented an interesting report on the "Phenal in Tetanus," and Dr. Bennet Porter gave his experience in "Dystocia in the Sow."

#### REPORT OF COMMITTEE ON SURGERY (Chas. E. Cotton, Chairman.)

It has been the custom in this society to hear from the chairman of the Committee on Surgery a resume of the new theories, operations and treatments that have been advanced during the year by members of our own and the sister profession. I have endeavored, with my limited opportunity, to prepare such a report.

**THE SURGICAL VALUE OF IODINE.**—The veterinarian has for years used iodine, either in the form of the tincture or combined with other vesicants in alcoholic solution as a counter-irritant for localized inflammation of vaginal sheaths of tendons, in synovitis and often in periostitis, with happy results.

It is claimed that Elsberg's solution, which is a 20 per cent. solution in alcohol and ether, while the tincture is a 7 per cent. alcoholic solution, will produce the same results as three applications of the ordinary tincture. This preparation is very valuable in the treatment of acute lymphangitis. It should be applied to the upper part of limb for an area eighteen inches wide and completely encircling the limb.

Dr. Veranus Moore, in the first edition of his pathology, stated that iodine was the one drug that would destroy and prevent the infection of the umbilical cord. I very forcibly remember the unpleasant experiences I had on a stock farm the first year following the founding of this farm, as a result of this infection. Four very valuable colts died.

Immediately after the publishing of Dr. Moore's pathology, I proceeded to have his instructions followed to the letter in the care of the umbilicus of foals. Since this has been carried out for a period of several years, only one colt has died as a result of this infection. This animal did not receive the treatment for some twenty hours after birth.

Iodine is useful in stimulating sluggish granulations, such as an indolent ulcer. Apply the pure tincture directly to the granulation tissue.

In the treatment of gangrenous ulcers the direct application of iodine will limit the extension of the process, hasten sloughing, lessen discharge and act as a deodorant.

Dannreuther, in the *Medical Record*, states that in his service at a Jersey hospital, he treated in the neighborhood of eight hundred patients with accidental wounds of all descriptions.

"We all know what the ordinary scalp wound looks like—laceration, hemorrhage, dirt, hair and sometimes vermin. And even with thorough cleansing, suture and gauze dressing (and dusting powders), we find that many of these wounds become infected, and if neglected, subsequently the pus may undermine the whole scalp."

Dannreuther made it his practice in all scalp, incised, punctured and lacerated wounds, after thorough shaving, washing with green soap and water and otherwise procuring cleanliness as nearly as possible, to inject tincture of iodine directly into the wound with an ordinary dropper. Enough sutures were then introduced to obtain complete coaptation, and a wet gauze dressing applied. It is important that this dressing be kept wet until there is primary union. He considers this the very best method of procuring sterilization of a dirty wound.

He does not include such conditions as a large lacerated wound where there is a great deal of contusion. Here sloughing naturally occurs, and iodine or any other such agent will not prevent it.

He says, however, it will limit the formation of pus. In such a case free drainage with constant hot wet dressings is a much better procedure than sutures.

Practically all the accidental wounds that a veterinarian is called to treat are of the same character, and I have given Dannreuther's treatment for infected wounds for the reason that the majority of us have been under the impression that iodine was too much of an irritant to a fresh wound to secure healing by first intention after its application.

Dr. W. L. Williams, in a paper presented to the Veterinary Medical Association of New York City on the "Systemic Handling of Wound Infection," states that the virtue of iodine given internally in the form of iodide of potash as systemic disinfectant has been clearly demonstrated clinically in the chronic wound infection of actinomycosis and botryomycosis.

He also obtained very beneficial results with it in acute purulent wound infection following operations, having clinically demonstrated that the iodine introduced into the system accomplished disinfection in a peripheral part of the body, and that it surpasses the efficiency of locally applied disinfectants and accomplishes what the latter fail to do.

He states "that the infection becomes disseminated amongst the living animal tissues and penetrates an important distance beyond the wound's surface so that the local application of disinfectants are impotent."

Williams prefers quinine in large doses when the infection is acute, the fever high and the case critical; but when it is not so acute and urgent, he prefers iodine and often combines the two drugs.

**THE USE OF ANIMAL SERA IN SURGERY.**—The use of anti-streptococcic and polyvalent sera is highly recommended by some surgeons as effective in wound infection.

Dr. Williams states "that the profession, as a whole, probably admits the basic correctness of the theory, but are not yet ready to accept in practice the products offered."

From past experiences I am of the opinion, however, that the use of antitetanic serum as a preventive measure is absolutely reliable. Practitioners in large cities, where tetanus is very common, are not doing their duty by their clients or the cases if they fail to give an animal that has a punctured nail wound or any other wound from which the air is occluded, a preventive dose of antitoxin.

Allow me while speaking of the use of sera in surgery to call attention to the fact that physicians within the past year have reported instances of serious results following the use of diphtheria antitoxin, some of which have proven fatal. These observations may prove of value to veterinarians who may be called upon to administer antitoxin to animals other than horses. These effects of the serum are sometimes developed in hypersensitive individuals, and the condition has been named anaphylaxis or proteid hypersusceptibility. The reason for this in man is not well understood, although the phenomena following the injection of serum into animals have been carefully studied and described by Otto, Roseman and Anderson.

The minor manifestation of injection of serum in man, viz., skin eruptions, oedema and joint pains, has been called "serum disease." Landis, in a paper read at the International Congress

on Tuberculosis, states: "It has been shown that if a guinea pig be injected with a single dose of horse serum even in large quantities, no ill-effects occur. If, however, after an interval of some days the animal is reinjected with serum, death almost always follows. This hypersusceptibility to serum has been noted after an initial dose so infinitesimal as 1/1,000,000 c.c. Furthermore, an animal once sensitized apparently retains this hypersusceptibility throughout its life, and in case of the female may transmit it to her offspring. Immunity to this hypersusceptibility may be obtained by repeated injections of the serum during the period of incubation—that is, during the first ten days."

The *Journal of American Medical Association*, in an editorial of October 3, 1908, states: "It is highly probable, in view of the identity of the symptomatology of the reaction on guinea pigs and the symptoms as described in the cases of serum intoxication in man, that the latter are results of intoxication with a foreign protein in persons who have been sensitized to this protein, often in some unknown way."

This fact, however, has raised two important questions, one being why fatal or serious accidents have so seldom occurred in view of the frequency with which two separate injections are given to one individual at a considerable interval; the other, whether the fact that a person has had a dose of horse serum for therapeutic purposes renders it unsafe to administer another dose at some later time. The answer to both of these questions probably lies in the difference in the effects of doses, of serum by different routes.

In order that the second or intoxicating dose of serum may produce its lethal effects it must enter the circulating blood and be present in the blood in something more than an infinitesimal amount. Presumably it is in the central nervous system that the foreign protein produces its effects and it must reach this tissue by the blood (or by direct injection) in *not* too extreme a dilution. Consequently, it is found that a much smaller dose of protein will kill sensitized animals if injected directly into the blood than if injected into the peritoneum, and the symptoms appear sooner, for absorption from the peritoneum is slow, and the amount of foreign protein in the blood at any time is necessarily small.

By the subcutaneous route, Lewis says: "It is probably impossible to reach the certainly fatal dose because of the impossibility of getting rapid absorption. As 5 or 6 c.c. always develops



a well-marked reaction, it is probable that from 15 to 20 c.c., if absorbed at about the same rate, would prove fatal. It would seem very probable, therefore, that the few cases of fatal intoxication with foreign serum represent the occasional instances in which the serum has been injected directly into a vein in a person who has been previously sensitized, thus explaining the fortunate infrequency of these catastrophes. If this is the correct explanation of the serious results that sometimes follow injection of serum for therapeutic effects, it should be very easy to avoid danger from a second injection, and thus make repeated use of serum, when necessary, a safe procedure."

Injections should be made in all cases with a glass-barreled syringe, and by aspiration before injection the presence of the point of the needle in a vein would be indicated by entrance of blood into the syringe.

If one had reason to fear sensitization, knowing that the patient had been previously injected with serum, it would undoubtedly be well to give but a small fraction of the serum at first, waiting a few hours before the second, for it is known that sensitized animals receiving less than a fatal dose at the second injection, are then refractory to large doses given a few hours or days later.

The use of sodium nucleinate in the treatment of acute infections is becoming more general in human surgery, especially in Europe. This substance is a combination of nucleinic acid derived from fish or flesh of animals (not yeast) with soda. It is put up in sterile tubes, each containing 0.05 grammes of the salt. The best results have been attained by one or two large doses—0.30 grammes—once or twice a day. The injection should be given deep in the muscles, as the one objection to their use is that they are somewhat painful.

In an article by Dr. D. T. Laine, of Havana, Cuba, he says: "We have in this substance the most efficient means of provoking, within a few hours, an artificial hyperleucocytosis, especially of its polynuclear elements. Accepting the theory of Metchnikoff, that the white cells are the only elements of the blood actively concerned in the defense of the body against the invasion of micro-organisms, both the surgeon and physician will find in this drug a valuable aid in overcoming acute infection." Dr. Laine believes that the life-saving properties of normal salt solution, as universally used, lie as much in the fact of its producing an artificial leucocytosis as on its direct mechanical effect of filling up

the depleted circulation. The indications for its use are in acute infection or in the acute exacerbations of chronic conditions, but not in chronic diseases of slow and progressive evolution.

Dr. Laine reports ten cases in which the drug has been used with apparent excellent results, in both infections that have taken place and those expected to occur. Among these cases was one in a patient fifty-nine years old, operated on for perforating appendicitis, fœcal fistula, slow convalescence. About the twenty-eighth day acute lymphangitis of the left leg; high temperature; weak; rapid pulse and pain. An injection of 0.30 grammes sodium nulleinate was given, followed in twelve hours by another 0.25 grammes. There was immediate drop in the temperature, rapid improvement in the general condition, and recovery. Other cases reported were puerperal phlebitis, septicæmia as a result of abscess, and purulent peritonitis, all of which, after the administration of the drug, rapidly convalesced.

Allow me to take advantage of this opportunity to urge on practitioners the more general use of local and general anæsthetics. The large majority of our leading surgeons, connected with college hospitals, are now using anæsthetics in most of the major operations, but you all know that the general practitioner throughout the country resorts to its use but very little. As a result, the laity and our clients look on our profession as composed of men without any heart and without sympathy for the suffering animal, which undoubtedly tends to lower their estimation of us as individuals and as a profession.

We all remember some of the operations that have been performed at the clinics of this association, when the public were allowed to attend. The animals were not properly confined, no anæsthetic administered, and the audience was entertained by the sight of bloody and painful operations on struggling animals, which, of necessity, were prolonged under these conditions. The operator could not do himself justice nor the association.

By means of anæsthesia, we can get more aseptic surgery, keep the animals quiet, do a cleaner, quicker operation, control hemorrhage and be able to apply better and more durable dressings, thus getting healing by first intention in the large majority of operations. This insures the more rapid recovery of animals, better results from the operations and the animal ready to resume its work at an earlier period.

Another important argument for anæsthesia is the safety from injury by the struggles of the animal to the operator and assistants, as well as the animal.

Many practitioners, who have not hospitals or have no available colleague or practitioner whom they can call to assist them, hesitate to use general anæsthesia, feeling that they cannot administer the anæsthetic and also do the operation. This, in a very few cases, is perhaps true, but in the large majority of cases the operator can anæsthetize the animal with chloroform and then proceed with the operation, leaving any reliable layman to continue the administration of chloroform when necessary. Chloroform anæsthesia can be controlled, as it kills almost invariably from the stopping of respiration, and one can easily regulate it by occasionally watching the respiration.

For long continued operations, very satisfactory results can be obtained by the use of chloral, administered per mouth, or interperitoneal. One need not hesitate after chloral has been given and the anæsthesia is not complete to give morphia hypodermically, when you will get a profound anæsthesia, respiration will come very slow, heart action may drop to twenty beats per minute, reflexes will be present, and still the animal insensitive to pain. When operation is completed and you wish to leave the patient, a dose of strychnia, hypodermically, will sufficiently stimulate to get the animal on its feet in a very few minutes.

A large majority of the operations that the practitioner meets daily can be performed under local anæsthesia without confining the patient. With the use of cocaine locally, we have been able to do practically all of the standard operations on the extremities, but we have always been somewhat handicapped by the absorption and general stimulating effect of the drug on the central nervous system; especially was this true in double neurectomy of both limbs in nervous horses. We now have the benefits of adrenalin solution, which, combined with cocaine, prevents its absorption and general effect. Stovaine, encaine and anæstagine are also used by some operators because of the fact that they do not act on the central nervous system. I hope you will accept this plea for the more general use of anæsthetics in the same spirit as it is given, and I shall be satisfied if it influences any of you to its adoption.

#### SWAMP FEVER (SO-CALLED.)

(Dr. C. A. Nelson.)

The nomenclature of this disease has varied a great deal. It has been known as typhoid fever of the horse, malarial fever, infectious anæmia, pernicious anæmia, American surra and swamp fever.

Pernicious anæmia seems perhaps to be the most suitable for our present knowledge of the disease.

Pernicious anæmia is a disease peculiar to the horse, and, so far as we know, not communicable to other animals.

For some time it has baffled the efforts of investigators and general practitioners as well. Much remains yet to be learned about the mode of infection, as well as treatment of this disease. From an article in the November issue of the REVIEW, by Dr. John R. Mohler, we learn the cause of pernicious anæmia is an ultra-microscopic organism or virus present in the blood of infected animals.

Blood drawn from infected animals even after being filtered through the finest filters known is capable of producing the disease, when injected into susceptible animals, the virus is still active in infected animals twenty-four hours after death. How much longer the virulence is active is not known.

It is surmised that the infection is obtained through intermediate hosts such as flies or mosquitoes or through internal parasites. The embryos of which may be taken into the alimentary tract with grass or hay obtained from swampy lands.

The course of pernicious anæmia is generally chronic, extending over a period of from two to eighteen months, depending on the condition of the animal and other complications, such as colic and nephritis.

The period of incubation varies from ten to forty days, manifested at the onset by rise of temperature lasting four to six days. The fever generally subsides and the animal remains normal, or nearly so, for some time. There is then another period of fever more severe than the first; some animals succumb to this; others may again have a period of apparent convalescence before the final end.

Th post-mortem anatomy discloses a very much emaciated carcass and a bloodless condition of all visible mucous membranes. There is difficulty experienced in skinning, due to the absence of adipose tissue. Further than this most cases are conspicuous by the absence of macroscopic lesions. There may be subcutaneous and intermuscular œdemas in different parts of the body. Often there is hypertrophy of the heart and sometimes of the spleen and lymph glands.

There may be petechial hemorrhages of the serous membranes of the heart and lungs, with a serious exudate into the thoracic cavity. No particular organ or tissue is affected to any great

extent, with the exception of the blood. The most noticeable thing about the blood is that its pale color due to the diminution in the number of red blood corpuscles.

The count of red cells may run as low as two million to the cubic millimeter or a little more than a fourth of the normal number. The red cells remaining are paler than in the normal state and often altered in shape and size. The blood is also deficient in heamaglobin. Fatty degeneration of blood vessels and internal organs has also been noted.

Symptoms—The history of most cases is characteristic. The horse has been losing flesh in spite of a ravenous appetite. Inquiry generally reveals the fact that the animal was sick, perhaps has a spell of diarrhœa some time previous, that he has not been doing well and gets tired very easily. The veterinarian is perhaps consulted at this time in regard to the animal's teeth or he is called to see the horse in the second attack of fever, the temperature may run from 103 to 105 degrees. There is accelerated respiration without any apparent change in the lungs or other air passages. All visible mucous membranes are of a pale, dirty color. When the animal is moved, the gait is unsteady and dragging, especially behind. There is weakness and some sensitiveness over the loins. There may be diarrhœa and relaxation of the sphincters resulting in involuntary micturition. Polyuria is a prominent system. Auscultation over the abdomen reveals increased peristalsis which persist all through the course of the disease. There may be swelling of one or more legs, as well as the most dependent part of the abdomen. Part or nearly all of these symptoms may be present during the fever stage. The most noticeable symptoms may subside even after the second stage of fever, but the lessened capacity for work, voracious appetite, pale, mucous membranes, gradual emaciation and increased peristalsis are a constant chain of symptoms. Towards the end the temperature rises permanently. The respiratory rate is higher and the heart labors violently. There may be regurgitation at the jugular veins and the animal finally dies from heart failure or exhaustion.

Diagnosis—This is comparatively easy when one considers the history and has one or more cases under observation. The intermittent fever and the microscopic examination of the blood will differentiate it from leucæmia and anæmia due to other causes. In the early period of fever it might be mistaken for

pneumonia-influenza or lymphangitis, but the pale color of the mucous membranes and normal passage of air through the lungs and upper air passages facilitates the differential diagnosis.

Prognosis—This is quite unfavorable. The mortality is perhaps 70 or 80 per cent.; accurate figures are difficult to obtain.

Treatment—This is unsatisfactory in the majority of cases. A great many remedies have been used with indifferent success. Purgation is not advisable on account of its weakening effect, aside from the fact that the bowels seldom become torpid. During the onset of fever good results may be obtained by the use of acetanilid, quinine and other fever remedies. Later nux vomica, convallaria, belladonna, digitalis and other stimulants are indicated. Fowler's solution should be given as a tonic, continued for at least thirty to forty days, beginning with about two drachms and gradually increasing the dose to four drachms or more, three times a day.

In addition to this the animal must be well housed and clothed during cold or rainy weather, and should only do enough work for exercise. Since our knowledge of this disease is limited, and no medical line of treatment has been found which is universally satisfactory, our efforts should be directed towards prophylaxis. On premises where the disease is found, pastures and meadows should, if possible, be disinfected by burning on the presumption that the forage is a carrier of infection. Horses should not be allowed to graze on land which is swampy and not well drained, nor should hay cut from such lands be fed to them.

#### OUR VETERINARY MEDICAL ASSOCIATION, ITS BENEFITS AND DUTY.

(Dr. R. LaPointe.)

The noblest and most worthy object for which a veterinary medical society is organized is the education of its members in the work of their profession. I do not know of any other calling in which it is so necessary to constantly study as in that of veterinary medicine.

One distinguished American diplomat, Andrew D. White, has written this comment upon Russia's most noted writer: "Of all distinguished men that I have ever met, Tolstoi seems to me most in need of that enlargement of view and healthful modification of opinion which comes from meeting men and comparing

views with them in different lands and under different conditions." The enlargement of view and healthful modification of opinion is as much needed by our profession as by men of letters.

Associations in nearly every profession have held from time immemorial, and it goes without saying in modern age, that a profession worthy of its name must have its association meetings; such meetings are of inestimable value to the young veterinarian, and he will doubtless attain into broader vision and safer opinions in due proportions to the extent of his personal experience in the direct practice of his profession by thus meeting and comparing views with others in the same profession.

This interchange of ideas and informal discussion of the common everyday subjects, and we all feel anxious to grasp any new ideas that may come up before such gatherings, cannot help but send fresh blood coursing through our veins and put new courage in our hearts, and we shall return home from such meetings happy to have become enlightened on some subject that has been troublesome to us, and pleased, it may be, to have been of some direct or indirect help to another.

I have already suggested why we should have these association meetings, but to specify more particularly, I propose:

Primarily, it is for the strengthening and betterment, practically speaking, of every member of the association.

Attendance at the meetings of our society comes to possess a charm for the earnest veterinarian like that of the camp fire rally of the soldier it leads to the cementing of old friendships and the formation of new ones, reacting upon the ordinary routine of work in the same manner as all alumni meetings.

The well-known effect of this is manifest in the sharpening of the intellect and broadening of the humanity of the veterinarian. This leads directly to the good advantage of all concerned.

Our association meetings are in many instances the only post-graduate course the practitioner will ever know. They may be made of constant and progressive value. Too often the veterinarian closes his books with graduation. But no professional man can afford to stop learning. Fellowship with men of like aims stimulates progress, activity and work. Isolation nurses stagnation. A man may resolve that in ten years he will be a great veterinarian; shut himself up in his narrow sphere, save money and the effort and time necessary to attend his association meetings. At the end of those years he is less a veterinarian than at the be-

ginning, for by that time even his dream will have become stale, his desire withered, his ambition gone out. The speediest horse is developed in the race, not at the plow.

Certainly, any intelligent member of our profession, knowing the possibilities of fellowship for social, financial and professional improvement, and ethical development attainable in a well-conducted association, should be unwilling even for a single meeting to deny himself the benefits which this society offers.

There is no man worthy of professional fellowship and public confidence who would not gladly be connected with such an organization. Every reputable veterinarian should be enrolled in this association. The time is near at hand when such membership will not only be essential to social position and material welfare, but will be considered a necessary requirement for professional standing.

This is especially true of the young veterinarian who needs the sympathy, encouragement and counsel of the older members of the profession. But our organization must have some work besides self-preservation. Its only reason for existence is the good it may accomplish, and it has a twofold obligation; first, to its members; second, to those outside its ranks. To its members the opportunities for benefits are unlimited, as I have tried to point out. To others, for example, the breeder and stock-raiser, the association can be of greatest service. We should cultivate public sentiment. Educate it in matters of hygiene and sanitation, instilling into it the great fact of its preventability of contagious diseases, the criminality of carelessness, the value of care.

It may be said if we educate the people to this extent that they will not need a veterinarian; but this thought is as narrow as it is evil.

We know that as a rule we get more business from an intelligent and educated owner than from one who does not know the first rudiments of our profession.

The public knowledge in regard to contagious diseases and their causes is very limited among our farmers. If there are any small animals that don't look well or don't thrive like the rest, rest assured there is something wrong with them, some unscrupulous stock-raiser will butcher and sell them; this is a very common occurrence with the poultry business. Therefore, I believe that one of the most important influences that organizations of this character serve is the education of farmers. Promotion of



knowledge among farmers is the basic need to-day. No other class of men has been so neglected as to farmers of this country. The live stock owners should be educated by means of official publications, the agricultural and the general press, lectures at farmers' institutes. A practical tuberculosis demonstration should be given by one who should have an infected animal slaughtered, explaining in this manner the workings of the diseases.

Let each one of us take it upon himself to have the many instructive veterinary articles that we know would be of benefit to the stock-owners reproduced in our local papers. In this way, as I have shown, we may best create public sentiment and indirectly reap our reward.

The secretary should have a complete list of the veterinarians of the state. It is a simple matter to check the membership list with the list of the veterinarians that thus make up the list of non-members. Probably a few of the names found thereon will be those of undesirable individuals who, for various reasons, would not be accepted by the association. The bulk of them, no doubt, are well-meaning and entirely respectable veterinarians, whose lack of interest in veterinary organization is due mainly to the fact that they have never been shown its important bearing on their professional work and its relation to the stock-raisers. The names of all these veterinarians should be included in the mailing list of the secretary, and to all desirable non-members should be sent announcement of our meetings.

There is no duty which the veterinary association owes which is of greater importance than that of looking after the recently graduated veterinary student.

We should all be possessed of the same desire to do all in our power to better as much as possible the welfare of the members of the association.

#### REPORT OF THE STATE EXAMINING BOARD FOR THE SEMI-ANNUAL PERIOD ENDING JANUARY 12, 1909.

**LEGAL MATTERS.**—During this period we have had several rulings from the Attorney-General's office.

**DUTY OF COUNTY ATTORNEY.**—In a letter written to the Attorney-General, under date of July 15, 1908, and answered by Mr. C. Louis Weeks, special assistant, under date of August 5, 1908, we stated the case of an illegal practitioner and a county attorney who was indifferent.

This was referred to the Attorney-General's office for advice concerning the duty of county attorneys in such cases and what further this board should do, under date of July 15, 1908.

In reply, Mr. Weeks stated: "Violations of chapter 419, Laws of 1907, constitute a misdemeanor only. Misdemeanors in the first instance are cognizable only before a justice of the peace. It follows that prosecutions for violations of chapter 419, Laws of 1907, should be commenced before a justice of the peace or in municipal courts having jurisdiction over misdemeanors. Justice and municipal courts have criminal jurisdiction over the preliminary examination of persons charged with crime."

Section 565, Revised Laws 1905, makes it the duty of the county attorney to attend before such courts *when such courts* shall request his attendance and furnish him a copy of the complaint.

We are of the opinion that it would be the duty of the county attorney to appear for the state in a prosecution for violations of chapter 419 when requested by the courts so to do and furnished with a copy of the complaint.

It probably would not be his duty to draw the complaint and initiate the prosecution.

The last clause of section 5 of chapter 419 provides: "In case any county attorney shall omit or refuse to conduct such proceeding, the board may employ another attorney for the purpose."

We have received under date of December 16, 1908, from Dr. —, of —, a very satisfactory letter giving full and definite statement and information and an accurate statement of the work done, fees collected, and witnesses who could be subpoenaed which would seem to give an abundance of very positive evidence for prosecution of this case.

A local attorney has been selected.

With this rather full, possibly tedious presentation of this case, I would respectfully ask for instruction from this board concerning further procedure. This is an important case because it involves a principle and gives us a precedent.

Is it your judgment that we should go ahead with the case, employing a local attorney, and undertake prosecution, understanding clearly that the county attorney is very indifferent and will probably help us as little as possible.

DISPOSITION OF FINES.—Under date of August 4, 1908, a letter was written to Special Assistant Weeks, in which he was

asked concerning the disposition of fines that may be imposed for violations of chapter 419, Laws of 1907.

Under date of August 5, 1908, Mr. Weeks replied that the wording concerning penalties in section 5 would not be sufficient to require that penalties recovered under this act should be paid to the examining board and such fines would therefore be disposed of as fines in other criminal prosecutions.

GRAND JURY.—Another case was where a movement was under way to prosecute an illegal practitioner, Dr. —, at —, when he suddenly left there and became an illegal practitioner at — under the name of —. He was arrested by the first-named authorities for fraud in connection with a board bill at that place. The prisoner was taken to the first-named place and kept in jail for some forty days. When he was about to be released the county attorney reported that the grand jury refused to indict the prisoner for fraudulent veterinary practice, and the county attorney declined to take any action in view of this. The grand jury's refusal was on the ground that the county had already been to heavy expense "for such a prisoner."

A letter was written to the Attorney-General stating the case and asking for information concerning the examining board's duty in such a case.

Mr. Weeks, special assistant, replied under date of July 13, 1908, that under the conditions as stated it was not incumbent upon our board to take further action, especially since the grand jury refused to indict and unless he again attempts to do veterinary practice without a license.

PROSECUTIONS.—We have had a number of very interesting cases up for consideration and prosecution. Some of these are still pending.

We had an illegal practitioner by the name of —, who was doing illegal practice at —. He was notified of his illegal practice, but the notice was returned unclaimed.

Later developments brought out the fact that he was still there posing as a veterinarian under the name of —.

Your secretary wrote him a strong letter and also sent a carbon copy of the same to the livery stable where he had his office. The letter was acknowledged by Mr. —, alias Mr. —, who had made a written statement to the effect that he would abide by the request to cease illegal practice. In other words, he made definite promise to quit.

Another illegal practitioner, — at —, concerning whom complaint had been made on account of illegal practice, has recently been reported as “usually not in condition for practice.” People are not calling for him any more and he is practically out of practice.

—, a licensed non-graduate, was prosecuted by —, county attorney at —, for pretending to secure license for a non-graduate who wished to register, and for receiving pay therefor. The result of the trial was that Mr. — paid the county for all costs involved and returned the full amount of money received to Mr. —, the non-graduate from whom he received it. Indictment was then quashed on account of — age and his first offence.

OFFICE WORK.—Our methods in office work have not changed much since the last report. The board has gotten out a new lithographed letterhead which we think both quite neat and appropriate. The work of revising our list of legal practitioners is completed. Manuscript is now in the printer's hands for the manual arranged for at the last meeting of this board and the State Veterinary Association.

RECOMMENDATIONS.—In this connection I would respectfully recommend for your consideration the adoption of a policy to the effect that if a licensed man fails to renew after customary notices have been sent for three successive years, his name be dropped from the notification list on the grounds that the practitioner has probably moved away, is retired from practice, or is deceased.

A motion to issue a new directory was passed at the last meeting of this board. At the Duluth meeting of the state association it developed that the association wished to publish a new constitution and by-laws with list of members, etc. It was generally agreed at the time that it would be desirable to combine the two publications and get out something that would be creditable to the Minnesota profession.

The following shows the general contents of the proposed publication:

*The Veterinary Profession in Minnesota.*

(1) Introduction, desirability of Minnesota as a place for veterinary practice.

(2) Articles of incorporation and by-laws, State Veterinary Association.

(3) Veterinary Practice Act.

(4) Attitude of the Examining Board toward prosecution suits.

(5) Alphabetical list of registered veterinarians in good standing with abbreviations and explanations, for state association members, non-members, graduates and non-graduates (graduates and non-graduates in different type).

(6) Registered veterinarians in good standing, by counties.

I would respectfully recommend that this manuscript be accepted and publication ordered, the expense to be divided between the examining board and state association on the basis of the number of pages of matter in which each board is especially interested, dividing equally the cost items in which both are interested.

A motion was passed adopting a board policy of going a step further with prosecution suits by employing a local attorney when necessary.

#### MISCELLANEOUS.

LEGISLATION.—It is already clearly evident that the Minnesota veterinary profession must be on guard and watch the present legislature. The secretary of this board has already been approached by a senator from the western part of the state. This senator evidently has an important constituent whom he wished to have registered. If the present law does not permit his registration, Senator —— would like to amend the present act so as to open it once more for the registration of non-graduates. I have written him urging to not do this. It is very probable that something of this kind will be attempted either by this senator or by other members of the legislature.

The following is a reply to the letter written by the senator referred to above:

Hon. ——,

——, Minn.:

DEAR SIR—I have received your letter of January 1st, and note what you say concerning Mr. —— . If, as you say, he has been practicing veterinary medicine in this state for more than twenty years, he has been a constant law-breaker for at least fifteen of those twenty years, and should hardly now be rewarded by our law-making body for such persistent law-breaking.

There have been four different opportunities since 1893 for such men to register, and the results have been that the live stock interests of Minnesota have been cursed with a very large number of hopelessly ignorant and incompetent veterinarians. This has proved quite a hindrance in getting in educated and competent men.

I should be very much disappointed, indeed, to see this mistake repeated so late in the history of veterinary practice where there are abundant opportunities and first-class veterinary colleges where men can become well equipped for intelligent practice.

It seems a little strange that so many intelligent men think that a man may become competent to treat diseases of animals with little or no training, whereas those same men would never think of employing a man not trained for treating diseases of human beings. As a matter of fact, more thorough training and keener and closer observation are necessary for good veterinary practice than for human practice of the same degree of efficiency for the human physician can get so much helpful information from his patients, even as to a definite statement of the case, results of previous treatment, etc.

Domestic animals probably have as many diseases and as many complications of those diseases as have people.

If you have the best interests of the live stock of Minnesota at heart, you will surely not introduce a bill in the legislature which will order the licensing of another hundred or two of densely ignorant or grossly incompetent men as veterinarians.

Out of the hundred which might register there would be probably two or three good citizens—quite intelligent men, capable of doing fairly good practice. The other ninety-seven would be composed of livery stable loafers, blacksmiths who had made a failure of their business, saloon loafers and that general class of men.

A very large majority of such men are a curse to live stock interests and a blighting disgrace to the veterinary profession.

A certificate with the seal of the state upon it is apparently a guaranty to the public of these men's competency.

The average farmer reasons that if this man has been licensed by the state, he must therefore be competent.

Granting that Mr. — may be an intelligent man, sober, industrious, and a good a citizen, aside from his fifteen years of persistent law-breaking, I hope you will consider the amount of damage that you would do to the live stock interests of the state and to standing of the veterinary profession by opening the practice act for this one man.

It has been tried repeatedly to pass amendments to the practice act which would register only one man, but this has never succeeded.

Don't do all this damage to benefit one man.

Very truly yours,

Secretary.

It might be well for board members and members of the state association to interview or write their representatives in both houses of the legislature and insist on opposition to any tampering with the veterinary practice act.

Neither the state association nor the examining board will probably have anything in the way of veterinary legislation to be favored at this present session. Members should be urged to oppose any bill that proposes to alter the present veterinary practice act.

**NEW METHODS.**—We are now trying to inaugurate a new plan in prosecuting illegal practitioners by employing some one for the purpose of gathering conclusive evidence of illegal practice. This person is to witness surgical operations, payment of money and the names and addresses of witnesses who could be subpoenaed in case of prosecution. This statement of evidence is then to be sent in with the reporter's affidavit to the secretary of the examining board who would then put the case up to the county attorney for prosecution. We have offered to do this for several complainants where conditions seemed favorable, but with no very definite results as yet.

**RENEWALS.**—During the past year 85 of the total registered non-graduates have failed to renew.

Eighteen graduates have failed to renew.

Of the 86 non-graduate failures to renew, 26 have been on account of deaths; 37 have moved out of the state. This leaves a total of 23 in the state who have failed to renew.

Of the 18 graduate failures to renew, 3 have been on account of deaths; nine have moved out of the state. This leaves a total of 6 graduates in the state who have failed to renew.

During the past year 22 graduates have been licensed and added to our list. Out of the total list now in good standing, 129 are graduates and 105 non-graduates.

In my first report as secretary, January, 1907, there were included a total of 111 graduates previously licensed and 185 non-

graduates. At that time there were in practice 96 graduates and 133 non-graduates, an increase to January of 33 graduates and a decrease of 28 non-graduates.

FINANCES.—This board now has \$50.29 on checking account at the First National Bank and \$755.37 on interest bearing deposit at the Farmers' and Mechanics' Savings Bank at Minneapolis. This money has since earned \$11.96 interest for the year.

This presents a very comfortable condition of our board finances. With an estimate of seven candidates, which we may reasonably expect for the January meeting, this board will soon reach the \$1,500 mark and be in such a financial condition that it may safely undertake a large number of prosecution suits or do any other legitimate work which may be needed.

M. H. REYNOLDS, Secretary.

A general discussion followed the reading of the foregoing report, after which Dr. Amos announced that he would entertain a motion to adjourn, but before adjourning he declared the new officers installed as follows:

President—Dr. C. E. Cotton.

First Vice-President—Dr. J. P. Anderson.

Second Vice-President—Dr. J. G. Annand.

Secretary-Treasurer—G. Ed. Leech.

#### THE BANQUET.

An elaborate banquet was served in the dining-room of the Merchants' Hotel; covers were laid for fifty, and every seat was taken.

At the close of the banquet, Dr. Amos, the toastmaster, called for speeches from Mr. Robert Cricksmore, President of the Dairymen's Association; Mr. J. R. Morely, Secretary of the Dairymen's Association of Owatonna, and Prof. Andrew Boss, of the State Experimental Station. All these gentlemen responded in a happy strain, and spoke on the veterinarian and his relation to their different branches of the work.

Drs. J. N. Gould and S. H. Ward were called upon. The latter spoke about the indispensable "wind-jammer," which created considerable amusement. Dr. C. E. Cotton (President-elect) and Dr. G. Ed. Leech (Secretary-elect) followed. After which a solo was rendered by Dr. J. A. Annand.



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THE CLINIC.

A clinic was held the next morning at 9.30, at Dr. C. E. Cotton's Hospital, No. 617 Fourth avenue, South Minneapolis, in charge of Drs. Gould and La Pointe, and was declared a very decided success. Those taking part in the operations were Drs. Shore, Beebe, LaPointe, Selby, Porter, Gould.

One of the most interesting operations was a "Cesarotomy" on a sow, performed by Dr. J. N. Gould. The operation was a success in every respect.

G. ED. LEECH, Secretary.

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MASSACHUSETTS VETERINARY ASSOCIATION,  
TWENTY-FIFTH ANNIVERSARY.

The twenty-fifth annual meeting of the Massachusetts Veterinary Association was held at Young's Hotel, Boston, on the evening of April 28, 1909.

President F. J. Babbitt presided over a short session between 5.30 and 6 p. m., which was occupied principally in the election of officers for the ensuing year. The election resulted as follows:

President—Dr. Madison Bunker, Newton.

First Vice-President—Dr. Chas. H. Perry, Worcester.

Second Vice-President—Dr. W. J. Hennessey, Worcester.

Secretary-Treasurer—Dr. Wm. T. White, Newtonville.

The meeting then adjourned, and the members proceeded directly to a large dining hall on the floor above, where a sumptuous banquet had been prepared for them and their guests.

The tables were tastefully arranged, and each gentleman found a beautiful, long-stemmed rose lying across a slip bearing his name, at the place that had been assigned to him. Sixty members and visitors sat down to participate in the festivities of the occasion, it being the silver anniversary of the organization of the association, which had been effected in March, 1884, in the same excellent hostelry in which the celebration was now being held.

After an excellent repast had been partaken of and had proceeded as far as the coffee and cigars, President Babbitt rose in his position at the head of the table and called upon Toastmaster

L. H. Howard, who occupied a position at the other extreme end of the table to his right, to introduce the gentlemen who were to respond to the toasts. This Dr. Howard did in his usual happy and excellent manner, giving an interesting little address with each introduction.

He called first upon the past presidents of the association, beginning by presenting that old veteran in scientific work, Frank S. Billings. He was followed by John F. Winchester, who gave a historical sketch\* of the association from its organization to the present date. Austin Peters was next presented and explained some of the difficulties incident to work in the Cattle Commission. He was followed by past presidents Thomas Blackwood, Alexander Burr, Langdon Frothingham, Benjamin D. Pierce, Daniel Emmerson and Frank J. Babbitt. The toastmaster then called upon the president-elect, Madison Bunker, who, poetical from the start, soon ran into verse and recited a very pretty little poem.

Toastmaster Howard then asked the members to rise and drink a toast to the "American Veterinary Medical Association," and couple with it the name of James L. Robertson, of New York. Dr. Robertson made a very feeling response in referring to "the old days," when he, with Dr. Liautard, Dr. Large and many others that he mentioned, used to make their pilgrimages to Boston, and to Young's Hotel, also, to attend the meetings of the then called United States Veterinary Medical Association.

To respond to the toast, "Bureau of Animal Industry," James F. Ryder, in charge at the Port of Boston, was called, and gave some interesting facts to his listeners.

Dr. Thomas Maloney, of Fall River, responded very ably, and in a most interesting manner, to the toast, "Veterinary Registration Board," and was followed by Mayor Coughlin, of that city, in response to the toast, "Municipal appreciation of the veterinarian." Mayor Coughlin gave a most interesting and scholarly address, which was thoroughly enjoyed by every one present.

At the request of the toastmaster, Secretary White read a letter from Prof. A. Liautard, Paris, France, Past Dean of the American Veterinary College, which brought forth a storm of applause that rang the length of the banquet hall. A copy of the letter is here reproduced:

\* Follows this report.

PARIS, March 28, 1909.

Dr. W. T. WHITE,

Secretary Mass. Vet. Association:

MY DEAR DOCTOR—I have received your very kind invitation to attend the 25th anniversary meeting of the Massachusetts Veterinary Association and enjoy the good dinner that will follow.

Twenty-fifth anniversary—Young's Hotel gathering—meeting of so many of *my* own boys. Oh! how many good hours these recall to my mind! How dear and tempting they are! It was before your organization that in 1898 I made my last professional visit in America. So you see that my pleasure would be immense if I could only be present, and yet all I can say in acknowledging your letter is to thank you, Sir, and your associates for having remembered me for such occasion.

I cannot be with you on April 28th, but my heart will, my thoughts will also, and I promise you to empty a good glass of wine that I will drink, unfortunately alone, to the health of all the members of the association and to her everlasting success in her professional work.

Yours with best wishes,

A. LIAUTARD.

When the applause following the reading of Prof. Liautard's letter had subsided, Toastmaster Howard asked the gentlemen to rise and drink a toast to "Dr. Liautard," and couple with it the name of Prof. Wm. J. Coates, his colleague and successor in the A. V. C. In responding to this toast, which touched him very much, Dean Coates said in part:

It is a source of intense gratification to me to be present at the 25th anniversary of the Massachusetts Veterinary Association and respond to the toast, "Dr. Liautard." Looking over so many faces he knew so well makes me feel old, and puts in mind many things silvery. The silver threads that time has placed on your heads, so many silver-tongued orators that have given a gleam of wit to your silver anniversary, showing that everything to-day is running in silver.

Dr. Liautard, he said, always recalled with pride and pleasure those occasions when he had been present in Boston with the Massachusetts Veterinary Association, especially meeting so many graduates of the American Veterinary College, who were all to him "his boys."

Then Dr. Coates took up Science and said: Science is the essence of life, it has raised mankind and will keep on uplifting; as all problems are presented science finds the way to meet them, it brought light out of darkness, it fashioned things out of chaotic conditions and as the world progresses so will science.

He gave elaborately a description of the Goddess of Nature and told how we are trying to lift the veil that conceals the cause, the source, the spring of what to-day is called nature.

He spoke of the many worlds in space and the all-pervading force surrounding us shrouded in mystery, but to raise the veil is the highest and noblest aim and ambition of the human intelligence. He emphasized the fact that veterinary science has attracted the attention and admiration of the world by trying to arrest those diseases which are directly communicated from animals to mankind. The sciences have multiplied so greatly that it is difficult to name and number them, but biology he thought the study of the day. He referred to the number of animals whose lives have been sacrificed on the altar of investigation for the sake of science and closed by saying the telescope is showing infinitely great and distant objects, while the microscope is disclosing equal wonders in the small and near. He again thanked the members in behalf of Dr. Liautard and hoped the association would continue its good work.

At the conclusion of Dr. Coates's remarks, the toastmaster asked the members and visitors to rise and drink a toast to "The Veterinary Press" and couple with it the name of Dr. Robert W. Ellis, of the AMERICAN VETERINARY REVIEW. Dr. Ellis' remarks applied to Veterinary Journalism in a general way, and called the attention of his hearers to the many and remote sources from which the contents of a single copy of a veterinary periodical came. And, coming from many countries and divers tongues, what an amount of translating, transcribing and arranging must take place in order to convert the heterogeneous and chaotic bundles into the innocent, orderly conditions that we find between the cover-pages when our magazines finally reach our desks.

Dr. Howard then called upon Dr. James B. Paige, of the Massachusetts Agricultural College, to respond to the toast, "A Friend at Court," to which Dr. Paige responded in his pleasing, scholarly manner that is so well known and appreciated by his colleagues and friends.

The sensation of the evening remained for the last, when the toastmaster asked the gentlemen to rise and drink a toast to "The Ladies" and couple with it the name of Dr. A. S. Cleaves, of Gardener.

Be it known that up to this point the happy, rollicking Cleaves had been the "rooter" of the evening, and had risen to the call of each toast, and asked what was the matter with the gentleman whose name had been coupled with the toast in question, and on being answered "He's all right," queried "Who's all right"? On receiving the name of who was "all right," he stirred the band of music beside him to play, and every man in the room to sing, "For he's a jolly good fellow," etc. This was not missed on a single occasion, and his vitality seemed inexhaustible, and his ambition and good fellowship to know no bounds.

But when he was asked to "toast" the ladies he seemed for a moment nonplussed that anything so foreign to him should have been coupled with his name. But being a man of unusual resource he soon was equal to the occasion and delivered a masterly address. The band then played Auld Lang Syne, and the singing of this old-time song closed one of the pleasantest of evenings, and concluded the celebration of the twenty-fifth anniversary of the Massachusetts Veterinary Association.

### HISTORICAL SKETCH.

BY JOHN F. WINCHESTER, LAWRENCE, MASS.

The first gathering of Massachusetts Veterinarians to organize a state association, was held at Young's Hotel, March 18, 1884, at the adjournment of the twenty-first semi-annual meeting of the United States Veterinary Medical Association. F. H. Osgood presided, with M. Bunker as Secretary. It was voted that the charter members be graduates of regular veterinary schools. The following were chosen to pass upon the eligibility of members: J. S. Saunders, L. H. Howard, W. Bryden, F. S. Billings and C. P. Lyman. This meeting was adjourned subject to the call of the Chairman.

Conforming to the vote passed March 18, the next meeting was held at the United States Hotel, April 2, 1884, with fifteen men in attendance, namely, Osgood, Bunker, Saunders, Howard, Bryden, Lyman, Blackwood, Billings, Peters, Skalley, Simmons, Penniman, Sherman, Winslow and Winchester. At this meeting it was voted to resolve ourselves into the Massachusetts Veterinary Association.

Ballots were cast for President, Vice-president, Secretary and Treasurer, and an executive committee of three, with the result that W. Bryden was chosen as President; F. H. Osgood, Vice-president; J. F. Winchester, Secretary and Treasurer; F. S. Billings, J. S. Saunders and C. P. Lyman, Executive Committee. The Executive Committee was requested to present a Constitution and By-Laws at the next meeting to be held the first Wednesday of May. This was done, and with a few amendments stood until March, 1906.

The Medical Library Association rooms at Boylston Place was first made use of in September, 1884, and at this time and place the first evidence of incompatibility of members was shown, when the resignation of a member was tendered and accepted at the October meeting.

At the November meeting an applicant for membership was turned down. The applicant presented himself at the December meeting, asking for reasons.

In order to be in evidence, at the January meeting, the investigation of a Veterinary College was begun, also, the formation of a committee on original research. Average attendance, 12.

At the April meeting of 1885, F. S. Billings was elected president and his first act was to appoint a committee to procure a *Charter*; next, he suggested that we assemble in another part of the state. As a compliment to Dr. Osgood, who had been a regular attendant, Springfield was chosen for the May meeting, and Dr. Billings demonstrated Koch's method of bacteria cultivation.

That gathering was a success, not on account of the number of members present, but by the very instructive paper and demonstrations given by Dr. Billings, and the number of influential men of that locality who were there. Dr. Billings' paper was entitled "State Medicine," and he designated the system of state medicine as the great life-saving service of the country.

June again found the association anxious to be heard from, and a very altruistic preamble to a resolution condemning the subscription plan as pursued by the management of Harvard Veterinary Hospital was passed by a unanimous vote.

At a subsequent meeting, Dr. Eliot, President of Harvard, appeared in person, urging the association to use its influence for the Veterinary Department of Harvard University.

In April, 1886, F. H. Osgood was chosen President and the Secretary's report for the past year was, that thirteen meetings

had been held, with an average attendance of ten; also, that numerous papers had been presented which were thoroughly discussed and a large number of pathological specimens were exhibited. A farewell letter was read from F. S. Billings, who had removed to Nebraska, assuring the association of his continued interest in it affairs.

The fourth occupant of the chair as president was J. S. Saunders, he being elected April 27, 1887.

The report of the Secretary for the past year was presented, and it is recorded that this association was incorporated that year.

Dr. A. Liautard was elected to honorary membership at the April meeting.

At the April meeting, 1888, J. F. Winchester was chosen to preside for the ensuing year.

That fall the subject of tuberculosis was presented by Dr. Ferguson, of Cambridge, he being a candidate for membership: the by-laws requiring each candidate to write, read and defend a thesis at a regular meeting.

The December meeting was devoted to the subject of tuberculosis as well as the following months.

At the April, 1889, meeting, A. Peters was honored with the office of President.

The record for 1889 I am unable to find, but that year I presented to the association the manuscript of the translation of the Aetiology of Tuberculosis by Koch, translated by Rev. Saure, of Lawrence, Mass., also the letter I received from Dr. R. Koch authorizing its publication. The translation of Dr. Koch's letter is as follows:

36 Kloster St., Berlin, April 29, 1889.

DEAR SIR:

In reply to the request contained in your letter of the 31st of March, I beg leave to say that you have my full authorization for the publication of the translation of my work upon the ætiology of tuberculosis.

With highest consideration.

Yours

R. KOCH.

Thos. Blackwood was elected to preside for the year 1890, and in May, of that year the subject of Rabies was considered. I was called upon to open the discussion, and said that it was difficult to form positive diagnosis without a good history or ex-

perimental inoculation to verify the diagnosis. Dr. H. C. Ernst said he did not see how anyone could doubt the existence of rabies, but inoculation was required to confirm its existence. He doubts if there are spontaneous recoveries from rabies. Muzzling of dogs would exterminate the disease, but it is impossible to enforce such a law. Dr. J. O. Whitney, of Pawtucket, R. I., cited cases occurring in man, directly traceable to bites from rabid dogs.

The meeting for March was devoted to the altruistic side of the profession when public good should be the goal of the members of this association in spite of mercenary interests or reasons of policy.

At the April, 1891-1892-1893, meetings L. H. Howard was elected as our presiding officer.

During his administration I find that we did criticise having a cattle commission in this state without a veterinarian on the board, and the Governor was the recipient of a communication signed by W. Bryden, F. H. Osgood and L. H. Howard, which was acknowledged as follows:

Commonwealth of Massachusetts,

Executive Deptment,

BOSTON, Jan. 20, 1892.

Mr. Williamson Bryden,  
36 Sudbury St., Boston, Mass.

MY DEAR SIR:

I have received the opinion of your committee, submitting the action of the Massachusetts Veterinary Association with reference to the necessity of having skilled and professional opinion upon questions relating to contagious diseases of animals.

I fully agree with the views of your association and shall endeavor, as far as in my power to carry out those views.

Very truly yours,

WM. E. RUSSELL.

At the annual meeting April, 1892, our guests were Hon. Levi Stockbridge, of the Massachusetts Cattle Commission, and Dr. George H. Bailey, of the Maine Cattle Commission. The following month Dr. A. Liatard was a guest and he favored us with a paper on "Ethics as a Means of Elevating the Veterinary Profession." (Vol. XVI., AMERICAN VETERINARY REVIEW.)



Veterinary schools and standards were considered, but the elevation of the profession was dependent largely on us as individuals. Arrangements were made to entertain the United States Veterinary Medical Association in September, the expense for the same to be met by voluntary subscriptions.

Mr. T. L. Bolton, of Clark University, favored us with a paper upon the results of the microscopic examination of a portion of the spinal cord, and lumbo-sacral nerves in a case of string halt.

The National Veterinary School in Washington, D. C., having a two-years' course was considered at the October meeting when Hon. Jerry Rusk was memorialized.

Resolutions censuring the action of certain officials of the Bureau of Animal Industry wherein their course is reprehensible as public officials were passed.

One of the unpleasant gatherings of the association was when the subject of advertising was being considered, and a member likened our profession to a trade, entirely a business transaction.

At the January, 1894, meeting J. M. Parker moved, and it was voted that a committee be appointed to report at the next meeting on the subject of tuberculosis and the following suggestions were offered:

1. That the March meeting be devoted to the consideration of tuberculosis.
2. That the members invite any person interested in the subject to be present.
3. The association employ a stenographer for that meeting.
4. To place ourselves on record as believing that certain forms of the disease in man should be recognized as contagious.

At the February meeting Dr. Howard offered the following resolution which was passed with but one objector, "That as bovine tuberculosis is recognized by the 'Contagious Diseases of Animals' act as a contagious disease, in our opinion, that being due to the same germ, certain forms of the disease in man should also be recognized by law as contagious."

At this time a committee was appointed to interview some of the well known physicians and pathologists, with the object to get them to read short papers on tuberculosis at the May meeting.

A favorable report was made at the March meeting that Drs. Ernst, of Harvard; Abbott, of the State Board of Health; Durgin, of the City Board of Health, and others had promised to attend the May meeting and take part.

Dr. Howard suggested that since certain gentlemen had agreed to take part in the May meeting, the members ought to be prepared to open the discussion by one or more members, dividing the subject in sections and being limited to ten minutes.

At the April, 1894, annual meeting Alexander Burr was chosen to preside for the ensuing year.

The May meeting was opened by A. Peters with a paper on "The Prevalence of Tuberculosis," J. F. Winchester on "Diagnosis of Bovine Tuberculosis," while J. M. Parker had for his subject "The Sanitary Conditions of Dairy Farms." Hon. W. R. Sessions, Secretary of the State Board of Agriculture, read a paper on "The Agricultural Aspect of Bovine Tuberculosis." Professors Ernst and Councilman, of Harvard; Secretary Abbott, of State Board of Health; Professor Pearson, of University of Pennsylvania Veterinary Department; Professor C. O. Lyman, of Harvard; Hon. Levi Stockbridge, of Massachusetts Cattle Commission; Dr. G. H. Bailey, of Maine Cattle Commission, and Dr. J. Foust, of Poughkeepsie, N. Y., were among those present, and their remarks were very instructive, adjournment not taking place until near midnight.

At the June meeting it was voted to have drawn up in a pamphlet form, a series of suggestions looking to the prevention of bovine tuberculosis in the state.

The suggestions made by the committee, appointed in June, and considered at the September, 1894, meeting, were ordered printed and a copy be sent to each member.

The Association was informed at the October meeting that the subscription plan at the Harvard Veterinary Hospital had been done away with by the generosity of Messrs. Heminway, of Boston, and Morgan, of New York.

The report of the Committee on Tuberculosis was adopted at the November meeting, and ordered published in the agricultural weeklies of the State, and copies sent to the Secretary of Agriculture.

The tuberculin test was under consideration at the meeting in December.

At the January, 1895, meeting the Registration of Veterinary Surgeons was under consideration and it was voted to leave the matter with the Committee on Legislation.

At the March meeting a copy of a bill providing for compulsory registration of veterinarians was presented by F. H. Osgood.

At the annual meeting, April, 1895, J. M. Parker was chosen to preside, and the subject of registration occupied our attention at that meeting and also at the May meeting.

At the June gathering marked differences of opinion on tuberculosis is recorded, and without arriving at any definite conclusions.

The meeting held September, 1895, was given entirely to interesting cases, and it is recorded that it was one of the most interesting meetings held for some time. "The everlasting subject of tuberculosis not being mentioned" is the comment of the Secretary, as published in the *AMERICAN VETERINARY REVIEW*.

At the annual meeting, April, 1896, J. M. Parker was re-elected for the ensuing year and several names were dropped from the roll for non-payment of dues.

That fall the Army Bill was under consideration, letters were sent to the Senators and Representatives urging the passage of the bill.

The April gathering in 1897 was held at the Quincy House, when J. F. Winchester was honored with the chair. That year the dues were reduced to \$3.00, and our first June outing was held at the Quarantine Station on Gallups Island, by the courtesy of the Boston Board of Health. Transportation through the loyalty of N. Ward Co. to the profession. Procedure in preparing Antitoxin was demonstrated; subsequently a shore dinner at Strawberry Hill and a moonlight sail down the harbor. With one exception, Southboro, at Deerfast Farm, our June meetings have been down the bay.

That fall the passage of a registration bill was urged.

At a special meeting in October, Prof. Theobald Smith read an essay on "The Restriction of Tuberculosis Among Dairy Cattle." At the regular meeting the question of legislation was the subject.

In November a special meeting was held when Dr. Liautard favored us with a paper on Glanders and Mallein.

At the regular November meeting, Dr. Paige gave a very interesting talk on the veterinary institutions he had visited on the Continent. Legislation was also considered.

Dr. Chas. Harrington honored us at the March meeting, and gave a very interesting and instructive talk on "His Experiences as Milk Inspector," and Mr. Keath spoke on "Bacterial Life in Milk."

At the April meeting, 1898, J. F. Winchester was re-elected. It was brought to our notice that House Bill 1406 confers extraordinary powers on local inspectors, who, in most instances, are not veterinarians and the Governor was memorized to that effect.

During the fall of 1898 was held the first clinic at the Boston Veterinary Hospital. Since then several have taken place.

The subject of rabies was under consideration in December.

Mr. Underwood, of Harvard, was the essayist in March, his subject being warranty and evidence.

April, 1899, L. Frothingham was chosen to preside, the meetings were regularly held and aside from personal observations, the changing of the meeting place was considered.

At the annual meeting in 1900, L. Frothingham was re-elected, the question of change of meeting place was considered, but no action taken.

B. D. Pierce was chosen president at the April meeting of 1901, and the compliment was returned to him in 1902. That year it was voted that the regular meetings be held at the Boston Veterinary Hospital.

At the November meeting there was received a communication from the alumni association of the Harvard Veterinary College relative to the registration of veterinarians.

The fourth Wednesday of January in 1903 the Harvard Medical School room was our meeting-place, when the status of the veterinarian for official work and life was thoroughly discussed, but the veterinarian came out second best.

It was reported to us in March that the registration bill had passed the house.

E. C. Becket was elected at the April, 1903, annual meeting, and then it was learned that the registration bill had been signed by the Governor.

A resolution was passed unanimously in May "That only graduated veterinarians be employed in public service, thus giving official recognition of the value of veterinary science."

Dr. Paige was asked at the October meeting to represent the association, see the Governor, and find out if a list of names submitted for registrars in veterinary medicine by the association would be considered by his excellency.

Glanders was the subject for the December and January, 1904, gatherings, and elicited a general discussion. The same subject was considered at the February meeting, but the records

fail to show that the subject was discussed. It was an illustrated lecture, but the audience were not matriculants, and did not know what to expect, although the author seemed to speak with the assurance of some teachers. At the March meeting the same subject was considered and the discussion was general.

In the spring of 1904 the officers of the past year were re-elected, and that year a delegation from this body was appointed to oppose the bill at the State House introduced by the antivivisectionists.

The Secretary was requested to notify each member when the hearing on the bill to pay for horses destroyed on account of glanders would take place.

At the April, 1905, meeting, D. Emerson was elected President, and it was voted that in the future our regular meetings would be held at Young's Hotel.

At the May meeting it was voted to revise the Constitution and By-Laws, and the following March the revised form was adopted.

The October meeting was adjourned to the Electro-Radiating Company's rooms, where Dr. Strong, of Tuft's College, gave an instructive demonstration.

In January, 1906, correspondence was begun with the Secretary of the Connecticut Veterinary Association to further the interests of the American Veterinary Medical Association's meeting, to be held at New Haven in August.

It was voted to request that the hearing on "Compensation for Glandered Horses" be postponed until a special meeting of the association is held. The special meeting was held without reaching an agreement, and it was voted that it take the place of the regular one.

The re-election of the same officers occurred at the April, 1906, meeting, and \$100 was appropriated to assist the Connecticut association in entertaining the American Veterinary Medical Association.

Aside from the June outing, that fall meetings were held at the Malden Veterinary Hospital, G. P. Penniman's Hospital in Worcester, North Packing & Provision Co., Somerville, and at Waltham, when inspection was made of the watch factory.

The records for March, 1907, show that cattle condemned in this state for tuberculosis were killed, and some were sold for beef under the fiat of the United States inspector.

It is also recorded that chained cows, reactors, were held over from Brighton, and sent out into herds where milk was produced. These cows were really under quarantine. They are boarded until such time as they are returned to Brighton for a retest with tuberculin.

A resolution was offered, disapproving of this state of affairs, and it was voted to discuss the same at the annual banquet.

F. J. Babbitt was elected President at the April, 1907, meeting.

The resolutions presented at the March meeting were revised, and the question was asked *why* the resolutions were presented.

It was voted that the revised resolutions be discussed, and the result was that they were referred.

Mallein as an immunizing or curative agent was discussed at the May meeting without arriving at a definite conclusion. A resolution was introduced at the November meeting censuring that part of the "Dick Bill" relating to the veterinarian.

In February, 1908, a resolution condemning the use of the products of tuberculous animals for human food *except* under a proper system of dairy and slaughter-house inspection was presented and *declared* accepted by the President.

At the annual April, 1908, meeting, F. J. Babbitt was re-elected. The Secretary reports that the membership is seventy-four.

At the May meeting a very interesting account of the work of the Fall River Board of Health in dealing with the milk supply and the farms supplying this commodity.

As a result, the following resolution was passed, and the same evening it was reconsidered and referred "That we urge upon the State Board of Health and the State Board of Agriculture the necessity for compulsory and uniform legislation, having for its object the complete eradication of tuberculosis from bovines within a reasonable period of years."

The Malden Veterinary Hospital was the Mecca for October, 1908, when a clinic was held.

At the February, 1909, meeting it was voted to arrange for the twenty-fifth anniversary of the organization of the association, and a committee was appointed with Dr. Howard as chairman.

At the March, 1909, meeting the business, aside from the reports of the anniversary committee, was personal observations.

Papers were read at the May meeting by Dr. A. W. Balch and W. R. Brinckerhoff, of Harvard Medical School, the former on "A Possible Cause of Azoturia," while the latter's subject was "The Pathology of Azoturia."

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### PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

The twenty-sixth annual meeting convened in Philadelphia on March 2d and 3d, 1909.

President Marshall addressed the members as follows:

This is the twenty-sixth annual meeting of our State Association, every year of which may be considered a milestone in its history. There has been a steady, vigorous growth during this time and each year has added proof of the value and usefulness of our chosen profession. All honor to the patriots who preceded us, but there have been marvelous changes wrought in the personnel of our members. Many veterinarians have been developed in recent years who possess the attributes of the best American citizens. They are well educated, honest, attentive to duty and possess judgment of the highest quality. Their opinions have been sought and not found wanting in forming laws and regulations for public improvements in many lines. This fact is especially true in reference to sanitary measures and regulations for suppressing and controlling contagious and infectious diseases. The general public has developed confidence in us and it begins to realize the necessity and usefulness of well-trained veterinarians. In former times our profession was judged and its usefulness measured more by our poorest men, while at present we are judged more by what our best men have done and are doing and the mistakes and errors made by the few are considered as personal rather than professional.

There is no profession, trade or calling where the individual is brought more in contact with the public than ours. The veterinarian has opportunities for studying all branches of industry, citizenship, politics, morality and education that are excelled by none. His every-day life furnishes a school of the greatest pos-

sibilities. Long strides and marked progress are being made along lines that will improve our conditions directly as well as indirectly. The usefulness of a veterinarian at the present time is not measured alone by his professional ability, yet this should be his specialty. They hesitate in putting themselves forward and taking a leading part that they should be able to do better than any other class of men. Representatives from other professions step in and do what we should do. Conceit is a fault, yet not so great as the lack of self-confidence. If we lack confidence in our own ability our clients will judge us in the same way. Courage is another faculty that we should cultivate. It is said that few persons have courage to appear as good as they are. We are too liable to attribute success in our fellow man to good luck. "Good luck is the handmaid of an upright, energetic character, and the conscientious observance of duty." No man has ever succeeded and none ever will who does not possess confidence and courage. We must have confidence not only in ourselves but also in other people. "Trust men and they will be true to you, treat them greatly and they will show themselves great." Most men are honest and square and they expect these qualifications in those whose opinions they seek. There was probably never a time when so many people are looking for morality and true worth. A veterinarian must be every inch a man or he will be lost in the struggle.

It is gratifying to see many of our members interesting themselves in the different branches of agricultural and our public school work. We should cultivate this spirit. In our regular work we have experience with every form of agricultural from the worst to the best, and the man who is observing should gather knowledge of the highest importance. Some of us do not do our share in distributing this knowledge. We are too busy with necessary burdens to undertake new ones, and feel that others know how better and can talk and write more fluently. For these reasons we allow them to do the work. We should be reminded occasionally that those who have done the most to elevate our standing were our business men. The small things are the ones that count and there are few who have no time to do a little extra work.

There is a feeling at present that agriculture should be taught in our public schools. Most farmers' children work hard enough, but there is too little attention given to why certain things are done and how work might be performed better and



more effectually. Our agricultural colleges are doing a valuable work, but there is need for more work on the rudiments of agriculture. Interest should be aroused in this line and it should begin with the child. We might have a better class of farmers in a few years if more attention and better instruction could be given along these lines to our farmers' boys and girls. There is too much of an effort being made to educate them at present to become citizens of a city and they leave the best opportunities at home to eke out a miserable existence in the city.

The veterinarian has a part to play in helping educate the younger generation to see the profit, beauties and pleasures to be derived from the pursuits of agriculture. If he keeps posted himself on the great questions of the day he may be able to drop a word here and there in his usual daily work that will prove of great value in the future. He should take an active part in institute work and in every way try to build up more interest in agriculture.

There are many subjects that a veterinarian should be able to discuss at farmers' meetings that would be of the greatest advantage in directing public opinion in the proper channels. In many sections our sanitary laws are not understood. These laws were made for protection and not for persecution. It is true that any law may inflict hardships on a few, but in most cases it is for the protection and benefit of the many.

In the question of handling tuberculosis we have done a great work, but we have not done enough. There is still too much tuberculosis and too much opposition to the work of eradicating it. Some farmers are desirous of doing their own testing because they have no confidence in the ability or faithfulness of veterinarians. It has been said that more than half of the veterinarians in Pennsylvania do not know how or do not make a tuberculin test properly. Whether this be true or not there should be no reason for such criticism. If we hope to hold this work we must do it better than it is possible for any other class of men to do it and do it honestly and faithfully or not at all. This should be true whether we are testing for dealers, buyers or our regular clients. We should find out whether the animals have tuberculosis or not and if they do have it report them to the State Live Stock Sanitary Board, where they will be properly handled. If anybody wants testing done under other conditions we cannot afford to do it.

The same is true in handling other contagious and infectious diseases. It is wrong to tell our client some way to get rid of a glandered horse on the quiet and warn him of the uproar that will follow if the condition is reported to the proper state authorities. It is our duty to explain the law on the subject and see that all its requirements are carried out. If for any reason we cannot have conditions adjusted without unnecessary trouble, we can turn the work over to those who can do it properly.

We should insist, more than we have in the past, on the necessities of a thorough disinfection after glanders, tuberculosis, abortion, white scours, etc. We may have given instruction how to do this work, but we know that it was done ineffectually if at all. Very few farmers and some veterinarians are not capable of doing this part of the work. We know that stables cannot be constructed good enough, no matter how much attention is given to ventilation, drainage, light, etc., to keep such diseases from attacking the animals and spreading, if once admitted. In removing the animals that are affected we have not removed all sources of infection, and we must see that the necessary disinfection is done or we have not done our whole duty. To one who is perfectly familiar with the necessities of disinfection many stables are a conundrum to know how best to make them safe for the animals that are left or those that are to be added. How much more difficult it will be for those who do not realize this fact.

It should be the object to instil into every one who attends this meeting a desire to return home resolved to make a greater effort in the future to set the standard of veterinary medicine higher than it has ever been before. We can do this if we put into operation a determination to do better work than we have in the past. Perhaps we can respond a little more punctually when called in a professional way; be more careful in making a diagnosis and possibly put in practice better ways of prescribing treatment; watch the case more carefully till we are sure that our services are no longer needed. We may be able to take more interest in the general welfare of our clients. Ambition is contagious. If we have it ourselves we may give it to someone that will be benefited by it. We may be able to do more in creating interest in school work or in some department of agriculture. We can compare this trip to the one taken by the merchant for supplies. If he takes his goods home and never unpacks or shows them, his trip will prove a failure. He will prob-

ably never sell his stock of goods and it will not be necessary for him to return in the future for more. We should get a new supply of stock. Take it home and put it in the show window. Let people see what we have and can do and come back to the next meeting for more. Our clients will gladly excuse us for two or three days when they realize that we are after information that will be useful to the whole community.

We should make a more determined effort to arrange our work so it will be profitable to ourselves. Where there is prosperity there is integrity. A veterinarian should be able to make a respectable living for himself and family and save enough to provide for the needs of old age. There is something wrong where this is not being done, and a desperate effort should be made to ascertain the cause and rectify it if possible.

The fee which a practitioner receives for his services varies in different sections and with individuals. There is no reason why he should make calls cheaper than the human physician, and in many instances he should receive more because the work is harder and not so pleasant in all cases. As a rule we should charge as much as we can get and still leave our clients satisfied. It may be a fault with some that they are too generous and put too little value on their services; they may be poor collectors, and for these reasons do not get all they should from their toil. There is a certain class of work that no one can get paid enough for doing. Making money should not be our only object in life, yet it is one of the principal ones. A man in any calling is judged by his ability to make a respectable living for himself and family and his promptness in paying his obligations. Let us return from this meeting with a renewed determination to be better men professionally and more successful from a business standpoint.

The profession in this state has been called upon twice since our last meeting to prove its worth. These questions are fresh in our minds. In the early winter apthous fever, one of the most disagreeable and obstinate cattle diseases, broke out in several places in the state at the same time. The disease was recognized, controlled and stamped out in record-breaking time and should reflect great credit to the profession throughout the country. These results were made possible through the fact that there was a united effort on the part of local practitioners, state and government authorities, and practically every man did his duty.

In entertaining the national association our profession was highly honored. This meeting was a record-breaker in many ways. At the present time Pennsylvania can boast of having the greatest number of members from any one state. Of the 854 members in the national association, Pennsylvania furnishes 80; New York comes next with 66 members. This was the largest meeting that the national association ever held, and the only criticism heard was the fact that we were too generous and lavish in our entertainment. The profession throughout the state provided the money with but one hint as to what was wanted. The entertainment committee was abundantly provided with funds to do all that was necessary. Personally, I wish to thank the profession for the great interest that it took and the financial assistance that it provided so generously in entertaining this great association. We trust that you all may be able to attend the next meeting, which is to be held in Chicago this fall, where we can be assured that our welcome and entertainment will be as great or greater than we provided last year.

As a token of the great appreciation which the members of the national association felt toward our state association, on the occasion of its twenty-fifth anniversary this beautiful gavel was presented. It is solid ivory trimmed with german silver, and upon it is engraved the following: "Presented to the Pennsylvania State Veterinary Medical Association on its twenty-fifth anniversary by its guests, the members of the A. V. M. A., from sister states and provinces, at Philadelphia, September 10, 1908." Let us use and preserve this beautiful memento for future generations and trust that the fraternal feeling which prompted its giving may ever continue among veterinarians.

I wish to thank you all for the great confidence that you have shown by selecting me twice your president. I feel that it is the greatest honor that it is possible for this association to confer, and I trust and hope that my successor may receive the same confidence and support that you, one and all, have extended to me.

Election of officers:

President—Dr. S. E. Weber, Lancaster, Pa.

Vice-Presidents—Dr. H. B. Cox, Philadelphia, Pa.; Dr. H. T. McNeil, Milton, Pa.; Dr. George A. Dick, Cain, Pa.

Treasurer—Dr. Francis Bridge, Philadelphia.

Recording Secretary—Dr. Stephen Lockett, Glenolden, Pa.

Corresponding Secretary—Dr. F. H. Schneider, Philadelphia.

Board of Trustees—Dr. Leonard Pearson, Dr. W. H. Hoskins, Dr. Otto G. Noack, Dr. W. H. Ridge, Dr. J. W. Sallade.

Drs. H. B. Brady, Adolf Berg, Francis Falls, G. R. Fetterolf, A. K. Davidheiser, John H. Engel and L. G. Marshall were elected members. Many of the counties of the state were heard from through the county secretaries' reports.

The Secretary's report showed the need for more activity in the enrollment of new members and a more co-operative spirit on the part of the members in contributions to the programs.

Delegates to the National, Schuylkill Valley, Maryland, Massachusetts, and Keystone Veterinary Medical Associations reported their opinions of the organizations they attended.

The committees appointed to investigate the conduct of Dr. David Roberts on the charge of advertising patent medicines and nostrums offered the following resolution, which was carried:

"That the veterinary profession of Pennsylvania condemns the method of deception adopted by Dr. D. Roberts to lull the people into a fake sense of security.

"That no one desirous of relieving the burdens of the public and claiming a professional degree resorts to expensive advertising to help them by appealing in this way for their money, but makes known any discovery of merit through the channels of the professional associations.

"His claims are such as characterize them as not well founded, and, if it was not for the thoughtless endorsements of agricultural experiment stations—often given by employees, the implied endorsements by reputable agricultural and breeders' journals whose commercial ends often prostitute their reading columns to the deception of their readers, as well as encouraging them to part with their money for remedies that have not been proven more valuable than the lines of treatment well known by every trained and educated veterinarian, this association would regard such a resolution as the present unnecessary, and such advertising schemes as beneath its notice."

The Committee on Necrology reported with sorrow the death during the half year of Dr. Walter L. Hart and Dr. Chas. E. Cullen, both of Philadelphia.

There was no report from the Committee on Publication. This brought up the necessity for some work being accomplished in this field. As a result, Dr. C. J. Marshall was appointed the new Librarian of the Association, and plans were formulated

to have the proceedings and nucleus of the association's library kept at the assembly hall in the new veterinary building at the Veterinary Department of the University of Pennsylvania.

The Committee on Meat and Milk Inspection reported favorably on the work that had been done in milk hygiene, but urged the necessity of a better scheme of milk and dairy inspection than that which was being practiced under the authority of the State Health Department.

The discussion of this subject was terminated by the following resolution:

"We, the Pennsylvania State Veterinary Medical Association, in convention assembled, believe that the system of dairy inspection promulgated by the State Health Department has not accomplished for the state what its aims and purposes called for. The selection of inspectors under the pay and allowances made has resulted in many of the positions being filled by men wholly without any training or special ability for such serious and important work. If this work is to be continued under the State Health Department, we recommend that only those furnishing evidence of fitness, training and experience be eligible for examination for these positions."

The Committee on Legislation reported that the laws pertaining to veterinary matters, live stock interests and public hygiene had so far been proven to be legal measures in the right direction, but that there was need for further legislation on such matters. If there was to be an improvement in veterinary science and police work, then there must be a big advance made in veterinary education and to this end every veterinarian should use his influence to secure appropriations for this purpose. A committee on appropriations was appointed and every member of the association was enrolled as an ex-officio member.

The Committee on Sanitary Science and Police concluded its report by offering the following resolution, which was passed:

"Resolved, That this association is opposed to the use of tuberculin by any person other than a trained veterinarian, as such use may defeat the very purpose for which tuberculin was intended. We recommend that legislation be enacted making the use of tuberculin by other than veterinarians a misdemeanor."

The Committee on Army Legislation expressed the opinion that finally all legislation pertaining to practice of veterinary medicine would have to be dealt with by the Federal Government.

The reports from the Committee on Animal Husbandry were encouraging in spite of the disorganization to which the live stock trade had been subject on account of the regulations against Aphthous Fever.

#### THE LITERARY PROGRAM.

On Monday evening before an audience of ladies and gentlemen, Dr. Henry Marshall read an excellent paper on "Meat and Milk and Their Relation to Public Health."

The Committee on Publication was instructed to have this paper published in pamphlet form for distribution.

This was followed by an interesting paper by Dr. Harshberger, of the Biology Department of the University, on "The Biologist's Side of Practical Plant and Animal Breeding."\*

The evening was concluded by a most entertaining stereopticon lecture on "Wild Animals in Disease," by Dr. W. Reid Blair, of New York.

On Tuesday morning Dr. Leonard Pearson addressed the Association on Aphthous Fever, with special reference to the wisdom of the "stamp out method" and its efficiency in the recent eradication of the disease in the state.

The afternoon session was occupied by papers:

1. "Rancid Odor in Milk Due to Micrococci Infection," by Drs. John Reichel and Henry C. Campbell.
2. "Contagious Abortion," by Dr. Stephen Lockett.
3. "Melanosis," by Dr. Simon J. J. Harger.
4. "Hereditary Transmissible Diseases in Horses,"† by Dr. C. J. Marshall.

This last paper caused such lengthy debate that a resolution was carried to continue the discussion at the semi-annual meeting of the association in September.

Fifty-seven members were present.

STEPHEN LOCKETT,  
Recording Secretary.

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#### MAINE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting was held April 14, 1909, at the Bangor House, Bangor.

President Murch in the chair and Secretary Joly at his post.

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\* Published elsewhere in this number.

† Published in May, 1909, REVIEW.

Members present—Drs. A. L. Murch, Bangor; F. L. Russell, Orono; E. E. Russell, New Sharon; F. E. Freeman, Rockland; R. E. Freeman, Dexter; H. T. Potter, Calais; I. L. Salley, Skowhigan; H. L. Stevens, Farmington; C. L. Blakeley, Augusta; F. W. Huntington, Portland; H. W. Lynch, Portland; W. H. Robinson, Woodsford, and Achilles Joly, of Waterville.

Visitors—Drs. J. G. Hayes and F. E. Stevens, inspectors of B. A. I.

Dr. F. L. Russell, of the Conference Committee of State Board of Health, reported that their committee had decided to present nothing special for new legislation, but to work along educational lines.

On the meat inspection bill Drs. Huntington and Joly reported what occurred at Augusta; that practically nobody took any interest in the matter; that the bill brought quite a stir-up before the Committee on Agriculture at the hearing.

On new legislation, Dr. Joly reported the different laws that were enacted in relation to the interests of the profession.

On conference with the Cattle Commission, Dr. Joly reported that the intention of the commission was to employ graduates, but possibly a few honest non-graduates might be so situated to work for the commission.

Dr. C. H. Newton, of Dover, was admitted to membership. Upon the application of Dr. J. L. Parks of the Executive Committee was not ready to report.

In the absence of the essayists the following papers were read and discussed:

“Enteritis,” prepared by C. W. Watson.

“Actinomycosis,” prepared by W. L. Melane.

“A Few Truths for the Future of Veterinary Medicine,” prepared by H. B. Jervis.

Dr. F. C. Dwinal was absent and no reason was given for not sending his paper.

Dr. A. L. Murch was elected representative to the A. V. M. A. meeting at Chicago.

Drs. G. R. Caldwell and W. S. Pugsley were scratched from the list of membership for non-payment of dues.

The following gentlemen were appointed to prepare a paper for the next meeting, to be held in Portland July 14, at the Prebble House: Drs. Lynch, Robinson and Wescott.

A. JOLY,  
Secretary.



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KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The April meeting was held at Donaldson's Hall on the 13th of the month.

The room was full of members and guests and every man who promised to be present for the program was on hand.

The Committee on Legislation reported:

1. That the Antivivisection Bill had not been presented to the House due to the energetic work of such organizations as the Pathological Society of Philadelphia, and the Society for the Protection of Scientific Research.

2. That the bills for appropriations on behalf of veterinary education in connection with the Veterinary Department of the University of Pennsylvania for the administration of the affairs of the State Livestock Sanitary Board had passed the Houses and would probably be graciously received by the Governor.

3. That the bill enabling a practitioner to be registered on petition, *i. e.*, Registration on Petition Bill, was also likely to be passed, although strong representations were made against it.

The literary program consisted of:

1. A paper on "Treatment of Tetanus," by Dr. E. B. Ackerman, of Brooklyn, N. Y.

2. A review, by Dr. Milton E. Conard, of Westgrove, Pa., of the work he had so far accomplished and was contemplating in milk hygiene and dairy inspection, under instruction of the State Livestock Sanitary Board.

3. A paper by Dr. E. Mayhew Michener, of North Wales, Pa., on "Pericarditis in Ruminants."

The discussion of the first paper showed that tetanus is a subject still full of interest to the practitioner and one fraught with many problems for the investigator.

The address of the second speaker met with the unanimous approval of the meeting in that it offered an object lesson on the most rational method of dealing with the question of milk hygiene and dairy improvement.

The third paper was deemed of such unusual value as a contribution to veterinary literature that the meeting requested that it be published in the *AMERICAN VETERINARY REVIEW*.

The evening was concluded by Dr. Reichel reporting a case of acute glanders in a woman of Chalfonte, Pa., who had been infected from a horse and showed typical cutaneous lesions. His specimens were very acceptable and interesting.

The May meeting was held on the 11th of the month at Donaldson's Hall, Philadelphia.

Dr. S. J. J. Harger occupied the chair in the absence of the president and vice-president.

It was arranged to hold the next monthly meeting at the assembly hall of the veterinary department of the University of Pennsylvania on the 15th of June, so that the members should be able to meet the visiting State Board Examiners.

The Committee on Legislation reported the governor's approval of the registration on petition bill whereby practitioners who were *known* as such prior to 1884 would still be able to register on petition merely; also of the measure making it illegal to offer for sale for working purposes horsekind which are unable to work.

The chairman of the Committee on Hereditary Transmissible Diseases in Horses reported that active measures were being taken to investigate this subject.

The chairman expressed the thanks of the association for the enjoyable evening which the Ava Club of ladies gave on April 29th to the members of the association.

The literary program consisted of an excellent address by Prof. Carl W. Gay on "The Draft Horse." He dwelt upon the essentials of his conformation relative to his work, of the economic features in his production, and closed by reviewing the strong and weak points in the Belgian, Shire, Percheron, Clydesdale and Suffolk Punch.

The reports of cases included:

1. "Persistent Unilateral Swelling of the Sheath in a Horse," reported by Dr. Edgar W. Powell.

2. "Fistula in the Croup Caused by the Penetration of a Large Splinter of Wood," reported by Dr. Warren L. Rhoads.

3. "Suspected Lead Poisoning in a Calf," reported by Dr. Stephen Lockett.

The meeting adjourned at midnight.

STEPHEN LOCKETT,  
Secretary.

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## RHODE ISLAND VETERINARY MEDICAL ASSOCIATION.

A meeting of the R. I. Vet. Med. Association was held at the Hotel Dorrance, Providence, on Saturday, January 16, 1909. The meeting was called to order by President Chas. T. Frey.

The principal business transacted was the election of officers and discussion of our proposed veterinary act, which almost became a law last year. The officers elected for the year were as follows:

Dr. T. E. Robinson, of Westerly, President.

Dr. L. T. Dunn, of Providence, First Vice-President.

Dr. G. L. Salisbury, Jr., of Lafayette, Second Vice-President.

Dr. J. S. Pollard, of Providence, Secretary.

Dr. J. T. Cunningham, of Providence, Treas.

Drs. Pollard, Frey, Dunn and Salisbury were reappointed as Legislative Committee.

A good attendance at the meeting was very encouraging, especially out-of-town members.

Meeting adjourned.

A special meeting was held at Hotel Dorrance on Manday, April 5, 1909, for the purpose of hearing the report of the Committee on Legislation. The chairman, Dr. Frey, reported progress, as the act had been passed by the House and was pending in Senate, and we had every assurance that it would soon become a law.

After a general discussion, meeting adjourned.

J. S. POLLARD,  
Secretary.

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## SOUTH ST. JOSEPH ASSOCIATION OF VETERINARY INSPECTORS.

The Veterinary Inspectors of the Bureau of Animal Industry, stationed at South St. Joseph, Mo., met on February 23, 1909, and organized an association to be known as the South St. Joseph Association of Veterinary Inspectors.

Dr. A. T. Shipley, inspector in charge, was elected president and Dr. H. R. Collins secretary and treasurer. The objects of the association are the promotion of good fellowship and the presentation and discussion of papers of scientific and professional interest along meat inspection lines, etc.

Meetings will be held at No. 407 Illinois avenue, South St. Joseph, Mo., on the fourth Tuesday of each month.

H. R. COLLINS,  
Secretary and Treasurer.

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## BANQUET OF THE SENIOR CLASS, VET. DEPT., U. P.

The first annual banquet of the senior class of the veterinary department of the University of Pennsylvania was held on the evening of April 22, 1909, at the Hotel Rittenhouse, Philadelphia.

The occasion proved to be a very pleasant affair and will go down in the class history as one of its most brilliant achievements.

Covers were laid for fifty members and the faculty; an orchestra furnished music during the serving of the repast, after which Toastmaster Cahill arose and, with a few well-chosen remarks, welcomed the faculty and introduced the first speaker of the evening, Provost C. C. Harrison, who responded to the toast "Pennsylvania."

The Provost was followed by Dean Leonard Pearson, who responded to the toast, "Our Department."

At the close of Dr. Pearson's remarks, Mr. H. W. Johnson rendered a pleasing violin solo. The remainder of the program consisted of the following toasts: "That Reminds Me," Dr. John W. Adams; "After Commencement, What?" Dr. S. J. J. Harger; "East and West," Dr. Carl W. Gay; "The Veterinarian Socially," Dr. W. Horace Hoskins, and a solo by Mr. Wm. H. Holdt.

The affair proved to be a most enjoyable one to everyone present and broke up at a late hour. The banquet committee consisted of Edward A. Cahill, Harry H. Howe, Marcus M. Fulton and Edward R. Records, Jr.

H. C. CRAWFORD, '09.

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OREGON has a new live-stock sanitary law which went into force on the 23d day of May, at which time the state sheep inspector, W. H. Lytle, D. V. M., became the state veterinarian and was made ex-officio a member of the state board of health, working in conjunction with and under control of that board. The new law provides that all disease eradication work must be done under non-indemnity measures. Tuberculin testing of cattle is made a voluntary measure on the part of the owner and gives him the privilege of either the modified Bang system or slaughter under the rules and regulations of the federal meat inspection law.

## NEWS AND ITEMS.

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THE Bureau of Animal Industry has issued a circular reporting the work done by the Bureau of Entomology on the control of the cattle tick.

EXAMINATION of applicants for license to practice veterinary medicine in New Jersey will be held at the State House, Trenton, June 25-26, 1909.

THE veterinary division of the University of Minnesota Experiment Station has just been given \$10,000 by the legislature for a hog-cholera vaccine plant.

THE Veterinary Alumni of Cornell, on May 14, 1909, presented to the University a portrait of Prof. James Law, the first director of the New York State Veterinary College.

DRS. A. H. MCGLOSSON and James A. Rudolph, of Madison, Ind., have opened a modern veterinary hospital at the place, which is said to be the most commodious in the Hoosier state.

DR. H. A. HELA has resigned his position as U. S. veterinary inspector and started in private practice in the beautiful city of Granite Falls, Minn., where he is building a nice little hospital.

THE London Van Horse Parade, held annually to encourage an interest in the quality and care of heavy horses, recently had 457 vehicles entered in the parade, an increase of 92 over last year.

AFTER listening to Veterinarian W. G. Clark's paper on "The Relationship of Human and Bovine Tuberculosis," the Marinette County Medical Society, Marinette, Wis., elected him to honorary membership.

DR. ROBERT W. ARDARY, V. S., and Dr. James T. Ware, D. V. S., have formed a partnership for the practice of veterinary medicine and dentistry and will conduct a large veterinary hospital at Pittsburgh, Pa.

GOVERNOR JOHN FRANKLIN FORT, of New Jersey, has re-appointed William Herbert Lowe on the State Board of Veterinary Medical Examiners of that commonwealth. Dr. Lowe's new commission bears date of May 5, 1909.

THE Pennsylvania Workhorse Parade Association held its annual meeting on May 31 (Memorial Day) in Philadelphia. The entire set of officers are veterinarians. Dr. Leonard Pearson is its president and Dr. C. J. Marshall is its secretary.

AMONG the members of the senior class of Smith College, Northampton, Mass., whose commencement exercises are announced for Tuesday, June 15, is Miss Helen Budd, the accomplished daughter of Dr. and Mrs. T. Earle Budd, of Orange, N. J.

ACCORDING to information received by the Department of Agriculture through the Department of State, the Belgian Government has issued a decree removing the restrictions previously imposed against the importation of cattle from the United States because of the existence of foot-and-mouth disease.

SUNOL, the one time champion trotting mare of the world, died a few days ago near Philadelphia. She was owned by John H. Shults for many years who placed her in the breeding ranks. She never was a great success as a brood mare and it is hardly probable that any of her produce will achieve great distinction upon the tracks.

DR. DE VINE, of Goshen, N. Y., who has for some time been connected with the Department of Agriculture of that state as an inspector, is acting as chief veterinarian at Albany in the absence of Dr. Kelly, who is devoting his entire time to private interests. Drs. J. P. Hart and G. R. Martin are looking after Dr. De Vine's practice at Goshen.

GOVERNOR POTHIER, of Rhode Island, on April 15, 1909, appointed the first State Board of Veterinarians in that commonwealth. The appointees were as follows: Drs. Ulysses S. Richards, of Woonsocket; Christopher Horseman, of Newport; Thomas E. Robinson, of Westerly; John S. Pollard, of Providence, and Charles T. Frey, of Warwick.

DR. WILLIAM T. SPENCER, of O'Neill, Neb., was married to Miss Winona Younkin, of Burwell, Neb., May 12. The doctor and his bride visited friends in Kansas City and Marceline, Mo., during the honeymoon. The doctor has been engaged in the quarantine division of the government service for several years and has a wide circle of acquaintances who will wish him well.

BECAUSE of its rare beauty and design, the class record of the veterinary class of 1909 of the University of Pennsylvania has been sent as part of the exhibit of the University of Pennsylvania to the Alaska-Yukon exhibition. The class record for 1909 eclipsed all efforts of previous years and was decided by the Bureau of Publicity to be the finest record in the university this year.

MINNESOTA STATE LIVE STOCK SANITARY BOARD.—The Minnesota State Live Stock Sanitary Board was well treated by the legislature recently adjourned. It received a special deficit appropriation of \$54,000, and \$35,000 a year for the next two years, especially for work with tuberculosis and glanders. This is in addition to its standing annual appropriation, a total of \$162,000 for the biennium.

ON May 15 there was shipped from New York the famous show stable of Judge W. H. Moore, consisting of forty-six head of the highest class show horses now owned in this country. These animals will go direct to London where they will appear at the International of Olympia in June. It is not the intention of Judge Moore to exhibit in any other show abroad and the animals will return to this country.

DR. C. J. SIHLER, of Kansas City, Kan., has been engaged to conduct a series of experiments at the Kansas City stock yards with a view of putting the immunizing of swine against hog cholera upon a practical commercial basis. It is the purpose of a commission firm to undertake the immunizing of stock hogs and breeding hogs at this large hog market so that they may be safely handled in a commercial way.

THE annual meeting of the chief inspectors of the various meat inspection stations throughout the country was held in Chicago during the week beginning May 10. The annual gathering was for the purpose of comparing notes upon the special conditions arising in the inspection service at the various points; also upon the interpretation of the rules and regulations concerning newer features of inspection service.

DR. J. H. STAUFFER DEAD—On Thursday, May 13, 1909, Dr. J. H. Stauffer, of Havre, Montana, who had been suffering from abscess of the kidney, died at the Columbus Hospital. The funeral was held from the Elks' lodge rooms under the auspices

of that order. The doctor was both an Elk and a Mason, and the pall-bearers consisted of representatives from his chosen profession (veterinarians), from the Elks and from the Masons.

DR. L. M. STECKEL made a tour through the principal German cities, visiting the veterinary colleges, the large dairy establishments, the stockyards and slaughter houses, and the market halls, thus acquainting himself with the veterinary hygienic conditions there. He also visited Paris, where he spent several days with Drs. Martel, Godbille and Piettre, studying the veterinary regulations as carried out in the French capital. While in Paris he called on Dr. Liautard. Dr. Steckel expects to go to Budapest to attend the International Milch Congress.

ROAD DRIVERS' ASSOCIATION ANNUAL PARADE.—The New York Road Drivers' Association held its tenth annual parade on Saturday, May 15, in the afternoon. The judges were Mr. F. M. Ware, and Drs. F. C. Grenside and W. Reid Blair. Among the distinguished invited guests were the Hon. Raymond A. Pearson, Commissioner of Agriculture of the State of New York; Hon. John F. Ahearn, President of the Borough of Manhattan; Hon. Bird S. Coler, President of the Borough of Brooklyn; Hon. Louis F. Haffen, President of the Borough of The Bronx, and the heads of practically all the city departments. The parade presented a very pretty spectacle and was a marked success.

POLICE DOGS MAKE GOOD.—“Nell” and “Jess,” two of the trained dogs of the police department of the City of New York, demonstrated recently their value to the department and the excellent training that they have received. After one officer had been mortally wounded and another disabled so that he could not pursue the assailant (a negro), who was soon lost to view and rapidly making his escape, these two well-trained dogs, who are graduates from Lieut. Wakefield's training kennels, were put on the trail and, after rapidly following it by the sense of smell, soon rounded up the terrified negro, who, upon sight of the dogs, each dragging a policeman at the end of his leash, seemed to have lost his taste for shooting and quietly submitted to arrest.

SADDLE HORSES BRING GOOD PRICES.—The second sale of saddle horses consigned by S. T. Harbison & Co. this spring was held by the Tichenor-Grand Company, New York, a few



days ago. The evening was one of the most stormy and uncomfortable of the season, by reason of which the attendance was exceedingly small. The animals sold were of an unusually high class and probably the average was better than at any sale of saddle horses held in this city within the past year. The nineteen head realized \$8,195, being an average of \$431. The highest sum paid for any one animal was \$610, which was realized for the chestnut gelding Knute Nelson. The bay gelding Corrigan, that many considered the best horse in the lot, brought \$600, and others sold all the way from \$310 up to \$575.—(*Breeders' Gazette*.)

THE dairymen of Kansas City and vicinity held a largely attended meeting in the auditorium of the Kansas City Veterinary College on the evening of May 18, at which meeting Drs. Hall, Barbee and Champlain, of the food inspection department of the city, made addresses. The prominent question before the dairymen was the universal one of "How to produce clean milk and how to market it at a profit." The dairymen of this district are feeling the influence of public sentiment and the wider knowledge concerning the quality of milk on the part of the consumers, and they determined to hold a series of meetings and discuss best methods to maintain their business despite the competition of larger dairies producing certified milk. The State Veterinarian of Missouri expects to soon take up the work of examining the herds in and about Kansas City that they may be free from tuberculosis.

NEW EDITION OF THE GOVERNMENT CATTLE BOOK.—One hundred thousand copies of a revised edition of the special report on the "Diseases of Cattle," by Drs. Atkinson, Dickson, Harbaugh, Hickman, Law, Lowe, Mohler, Murray, Pearson, Ransom, Salmon, Smith and Trumbower, Bureau of Animal Industry, U. S. Department of Agriculture, have been printed by order of Congress.

While the work is of a popular character, and is intended primarily for the use of the farmer and the stock owner, it will doubtless also continue to be found useful to the student and the veterinary practitioner. The changes made in the present edition consist mainly in a revision of the chapters on diseases of the digestive organs and infectious diseases and the substitution of a new chapter on animal parasites for the chapter on that subject in the edition of 1904.

WE are indebted to the New York State Department of Agriculture for the following list of bills that have passed the legislature during the past session and been signed by Governor Hughes, in the interest of agriculture:

Sen. Raines', S. 1157, regarding enforcement of quarantines.

Mr. Boshart's, A. 1663, regarding approval of work of veterinarians not in the employ of the department.

Sen. Platt's, A. 2327, relating to bringing animals into this state from other states.

Mr. Shea's, S. 1482, relating to payment of indemnity for glandered horses, etc.

Mr. Boshart's, A. 2095, giving the chief veterinarian of the department authority to quarantine infected premises, such as now exercised by assistant commissioners.

Sen. Raines', S. 2414, regarding posting of rabies notices, etc.

**NEW YORK STATE VETERINARY MEDICAL SOCIETY.**—The New York State Veterinary Medical Society will hold its annual meeting at Ithaca, N. Y., on August 25, 26 and 27, 1909. Secretary De Vine and Chairman Fish, of the local committee of arrangements, will furnish a good part of the program in the July number of the REVIEW. These dates were decided upon after a considerable amount of careful thought on the part of the officers and the local committee of arrangements, who were desirous not to have them clash with the dates of any other meetings that are usually held around that season, so as to permit the great numbers of veterinarians from adjoining states who are in the habit of attending the meetings of the New York State Veterinary Medical Society as well as its members, every opportunity of doing so without in any way interfering with their plans to attend the meeting of the national organization at Chicago in September.

A CLIPPING FROM THE "PUBLISHER'S DESK" COLUMN OF "THE RURAL NEW YORKER" OF MAY 15, 1909.—I want to express to you my sincere appreciation of the stand of your journal in excluding from your columns the advertisement of the Ontario Veterinary Correspondence School at London, Ontario, Canada. The many in my own state, and in other states, who have parted with from \$12.50 to \$40 for one of their diplomas, which are absolutely worthless, is simply astounding. There is

not a state in our Union where these diplomas have a standing, and it is well for those engaged in animal industry that they do not, for such men, with a little knowledge, become the most dangerous pretenders to the welfare of the live-stock of our land.

W. HORACE HOSKINS.

We can say little to add emphasis to the above, except to explain that Dr. Hoskins is secretary-treasurer of the Pennsylvania State Board of Veterinary Medical Examiners, and is abundantly qualified to speak with authority on the subject.

INCREASING PREVALENCE OF ANIMAL TUBERCULOSIS.—The reports of the Bureau of Animal Industry of the United States Department of Agriculture indicate that tuberculosis among live-stock is steadily increasing, as shown by the number of animals found affected at the various slaughtering centers. The increase in the number of cases found is due in part, but only in part, to the increased efficiency of the method of inspection. The meat inspection figures show that nearly 1 per cent. of cattle and over 2 per cent. of hogs slaughtered are tuberculous, which is surely an alarming condition.

Feeding experiments conducted by the bureau have proved conclusively that hogs are readily infected through the ingestion of feces and milk from tuberculous cows. There is therefore no doubt that the prevalence of the disease in hogs could be greatly reduced simply by eradicating it from cattle.

Considerable testing of cattle has been done in Washington, D. C., and vicinity for the purpose of assisting the District authorities in obtaining a pure milk supply, and of obtaining for the bureau further information regarding the extent of tuberculosis in the locality and for other purposes. In these tests about 17 per cent. of the dairy cattle reacted.

The percentage of tuberculosis in various states, shown by tests conducted by the officials in those states with bureau tuberculin, indicates that from 2.79 to 19.69 per cent. of the cows react, and it is estimated that in the country at large at least 10 per cent. of the cows in dairy herds are tuberculous.

The recent agitation against the milk of tuberculous cows as human food has had the effect of causing many herds to be examined, with astonishing results not only to the owners but to the officials themselves. Can it be wondered at that so many infants and children die of intestinal tuberculosis when so many of the cows from which milk is obtained are tuberculous?

Without considering the matter as a public health question, but looking at it entirely from an economic standpoint and as a business proposition, live-stock raisers cannot afford to have tuberculosis in their herds. As an illustration, Argentina requires that all cattle imported into that country shall be subjected to the tuberculin test upon arrival, and as a consequence exporters from the United States have had the test made on cattle intended for shipment. The results of these tests showed that in some of the pure-bred herds nearly 50 per cent. of the animals were diseased, and in consequence sales were lost.

When the practice becomes general for all buyers of breeding cattle to have animals tested before placing them in their herds, the breeder of strictly healthy cattle will be much sought after. Already some breeders of pure-bred cattle have established or are arranging to establish such herds. As soon as the breeders fully understand the fact that it is unprofitable to go on breeding cattle while tuberculosis exists in their herds, much of the objection raised against the sale of live-stock subject to inspection will disappear, for it would be worth the price of several condemned animals for the owner of a valuable herd to know the fact as early as possible if the disease exists in his herd, as the longer he delays in taking steps to prevent its spread the greater will be his loss eventually. Figures for the last year secured from abattoirs where Federal inspection is maintained show that over 10 billion pounds of meat was inspected, 46 million pounds of which was condemned, nearly three-fourths being for tuberculosis.

The recent effort of the large packing interests to buy all dairy cows subject to post-mortem inspection shows how serious the plague is becoming. Sooner or later the man who raises tuberculous animals must suffer the loss, unless the loss is paid for out of public funds: and when the loss is placed upon the producer we may then know that the end of the disease is in sight.

It may at some time be necessary for the Federal government to quarantine against interstate shipments of cows from certain states where the disease prevails to a considerable extent, and require a strict supervision over all animals removed from such states for interstate shipment, and only remove the quarantine from sections of the state when it has been demonstrated that the disease either has been eradicated or is under strict local quarantine.

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| 114 | Aconitine, Crystals.....                                                   | 1-40 gr.   | \$0 12                     |
| 115 | Aconitine, Crystals.....                                                   | 1-30 gr.   | 13                         |
| 100 | Aconitine, Crystals.....                                                   | 1-20 gr.   | 15                         |
| 116 | Aconitine, Crystals.....                                                   | 1-10 gr.   | 17                         |
| 117 | Aconitine, Crystals.....                                                   | 1-6 gr.    | 22                         |
| 118 | Aconitine, Crystals.....                                                   | 1-4 gr.    | 27                         |
| 161 | Arecoline, Hydrobrom—Declined.....                                         | ¼ gr.      | 50                         |
| 159 | Arecoline, Hydrobrom—Declined.....                                         | ½ gr.      | 80                         |
| 160 | Arecoline, Hydrobrom—Declined.....                                         | 1 gr.      | 150                        |
| 101 | Atropine Sulphate.....                                                     | 1-4 gr.    |                            |
| 121 | Atropine Sulphate.....                                                     | 1-2 gr.    | 15                         |
| 119 | Atropine Sulphate.....                                                     | 1 gr.      | 30                         |
| 158 | Barium Chloride Comp (Ellis).....                                          |            | 15                         |
|     | { Barium Chlor.....                                                        | 7 grs. }   |                            |
|     | { Digitaline.....                                                          | 1-12 gr. } |                            |
| 152 | Cardiac Tonic.....                                                         |            | 20                         |
|     | { Digitaline, Pure.....                                                    | 1-10 gr. } |                            |
|     | { Sparteine Sulph.....                                                     | 1-5 gr. }  |                            |
|     | { Strychnine, Nitrate.....                                                 | 1-8 gr. }  |                            |
| 102 | Cocaine Muriate.....                                                       | 1 gr.      | 30                         |
| 124 | Cocaine Muriate.....                                                       | 1-½ grs.   | 40                         |
| 125 | Cocaine Muriate.....                                                       | 2 grs.     | 45                         |
| 120 | Cocaine, 4½ grs. for Veterinary Anesthesia.....                            |            | 95                         |
|     | (One tablet dissolved in 1 drachm of water makes an 8-per cent. solution.) |            |                            |
| 103 | Colchicine.....                                                            | 1-4 gr.    | 70                         |
| 126 | Colchicine.....                                                            | 1-2 gr.    | 1 20                       |
| 127 | Colic (Knowles).....                                                       |            | 50                         |
|     | { Morphine Sulph.....                                                      | 2 grs. }   |                            |
|     | { Atropine Sulph.....                                                      | 1-4 gr. }  |                            |
|     | { Aconite Cryst.....                                                       | 1-20 gr. } |                            |
| 104 | Coniine Hydrobromate.....                                                  | 1-2 gr.    | 43                         |
| 128 | Coniine Hydrobromate.....                                                  | 1 gr.      | 60                         |
| 105 | Digitaline, Pure.....                                                      | 1-8 gr.    | 12                         |
| 129 | Digitaline, Pure.....                                                      | 1-4 gr.    | 20                         |
| 156 | Ergotine.....                                                              | 2 grs.     | 18                         |
| 157 | Ergotine.....                                                              | 4 grs.     | 27                         |
| 113 | Eserine Salicylate.....                                                    | 1-4 gr.    | 50                         |
| 133 | Eserine Salicylate.....                                                    | 1-2 gr.    | 75                         |
| 134 | Eserine Salicylate.....                                                    | 1 gr.      | 1 25                       |
| 135 | Eserine Salicylate.....                                                    | 1½ grs.    | 1 90                       |
| 106 | Eserine Compound.....                                                      |            | 1 00                       |
|     | { Eserine Salicylate.....                                                  | 1-4 gr. }  |                            |
|     | { Pilocarpine Muriate.....                                                 | 1-2 gr. }  |                            |
|     | { Strychnine.....                                                          | 1-8 gr. }  |                            |
| 153 | Eserine and Pilocarpine.....                                               |            | 1 25                       |
|     | { Eserine.....                                                             | 1-2 gr. }  |                            |
|     | { Pilocarpine.....                                                         | 1 gr. }    |                            |
| 154 | Colic (Forbes).....                                                        |            | 2 20                       |
|     | { Eserine Salicylate.....                                                  | 1 gr. }    |                            |
|     | { Pilocarpine Mur.....                                                     | 3½ grs. }  |                            |
| 107 | Hyoscyamine Sulphate, Crystals.....                                        | 1-8 gr.    | 75                         |
| 146 | Hyoscyamine Sulphate, Crystals.....                                        | 1-4 gr.    | 1 30                       |
| 108 | Morphine Sulphate.....                                                     | 1 gr.      | 20                         |
| 136 | Morphine Sulphate.....                                                     | 1½ grs.    | 30                         |
| 137 | Morphine Sulphate.....                                                     | 2 gr.      | 35                         |
| 138 | Morphine Sulphate.....                                                     | 2½ grs.    | 45                         |
| 155 | Morphine Sulphate.....                                                     | 3 grs.     | 50                         |
| 109 | Morphine and Atropine.....                                                 |            | 45                         |
|     | { Morphine Sulph.....                                                      | 1½ grs. }  |                            |
|     | { Atropine Sulph.....                                                      | ½ gr. }    |                            |
| 139 | Morphine and Atropine.....                                                 |            | 45                         |
|     | { Morphine Sulph.....                                                      | 1½ grs. }  |                            |
|     | { Atropine Sulph.....                                                      | ½ gr. }    |                            |
| 140 | Morphine and Atropine.....                                                 |            | 50                         |
|     | { Morphine Sulph.....                                                      | 2 grs. }   |                            |
|     | { Atropine Sulph.....                                                      | 1-4 gr. }  |                            |
| 141 | Morphine and Atropine.....                                                 |            | 60                         |
|     | { Morphine Sulph.....                                                      | 2½ grs. }  |                            |
|     | { Atropine Sulph.....                                                      | 1-4 gr. }  |                            |
| 142 | Nitroglycerine.....                                                        | 1-10 gr.   | 12                         |
| 143 | Nitroglycerine.....                                                        | 1-5 gr.    | 16                         |
| 110 | Pilocarpine Muriate, Crystals.....                                         | 1-2 gr.    | 50                         |
| 144 | Pilocarpine Muriate, Crystals.....                                         | 1 gr.      | 90                         |
| 145 | Pilocarpine Muriate, Crystals.....                                         | 1½ grs.    | 1 10                       |
| 111 | Sodium Arsenite.....                                                       | 1 gr.      | 12                         |
| 112 | Strychnine Sulphate.....                                                   | 1-4 gr.    | 10                         |
| 147 | Strychnine Sulphate.....                                                   | 1-2 gr.    | 11                         |
| 148 | Strychnine Sulphate.....                                                   | 1 gr.      | 12                         |
| 149 | Veratrine Muriate.....                                                     | 1-4 gr.    | 12                         |
| 150 | Veratrine Muriate.....                                                     | 1-2 gr.    | 12                         |

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# AMERICAN VETERINARY REVIEW.

JULY, 1909.

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## EDITORIAL.

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### EUROPEAN CHRONICLES.

PARIS, May 15, 1909.

Referring to a part of my chronicle of last January, where I was reviewing the series of the excellent articles of the learned Editor of the *Journal of Comparative Pathology and Therapeutics* where the nature of the microbe of Epithelioma Contagiosum was mentioned, our readers may be interested in the following extract which relates to that disease and which I have found in both the *Agricultural Journal of the Cape of Good Hope* and that of Director McFaydean. At any rate the illustrations that accompany these articles are too characteristic not to deserve reproduction in other veterinary publications. I will borrow from both our contemporaries, the English and the South African journals, the following extracts and illustrations:

“Epithelioma Contagiosum, Avian variola, fowl-pox, or again, sore head, or warts on the head, is very prevalent amongst fowls, turkeys and pigeons in the Cape Colony.” I must say before going further that the article is written by Walter Jowett, Veterinary Branch, Department of Agriculture, Cape Town. The author has seen quite a number of fowls suffering with the disease, coming from various parts of the district, and there had been several publications made relating to it.

“Fowl-pox, or Epithelioma Contagiosum, is a highly contagious disease, occurring frequently as an epizootic among fowls, pigeons, turkeys, geese and other birds. It is character-

ized by the presence on the unfeathered or only scantily feathered portions of the skin, of a number of firm wart-like outgrowths of the epidermis. These growths occur specially on the comb, face, wattles, eyelids, skin surrounding the eyes, the openings of the ears, the base of the nostrils and the angles of the mouth.

“According to some observers they may occasionally spread over the feathered portions of the head and neck and they may also occur on the outer surfaces of the thighs, abdomen, under the wings and in the vicinity of the cloaca. At first, they appear as small, rounded or oval, firm, shot-like tubercles projecting above the surrounding swollen skin. Soon they increase in size, may bleed and are often covered with a dirty looking brown or brown red crust. In some cases the warts remain isolated and attain the size of a pea or bean, or again they are arranged in masses of varying size, when they appear as mulberry-like warty growths. When the growths form on the eyelids or on the skin surrounding the eyes, it is not unusual to see the masses cover the entire surface of the eye and more or less interfere with sight. Conjunctivitis then complicate the cases. In the course of three or four weeks, the growths may shrivel up and fall off, after which event, the bird enjoys immunity against subsequent infection. No scar remains. In other cases, the lesions extend; they may make their appearance on the mucous membrane of the mouth and throat. Most of these die. On the mucous membranes the appearance is that of a diphtheric membrane, but it is not of that nature.”

\* \* \*

“At the post-mortem examination of birds which have died with fowl-pox, beyond the lesions already mentioned on the skin and which may be present in the mouth and throat, lesions in other parts of the body are not usually met. Similar lesions have been shown occurring in the œsophageal mucous membrane, and there is no doubt that when such are present, the inflammatory process may have extended to and involved the intestines.

“The histological structure of the nodules shows marked

thickening of the epidermis and infiltration of the dermis. The proliferating epithelial cells are markedly increased in size and show in the most superficial cell layers small homogeneous flakes or a homogeneous mass, which occupies the greatly bloated cell cavity and presses the cell nucleus aside. The changes in the cells of the mucous membrane are similar.

"It is in the wart-like growths which form on the comb and elsewhere on the skin of infected fowls, that invariably the active virus of fowl-pox exists. Scarify the skin of a fowl which has never had the disease and rub it with one of the tumor masses from a diseased chicken, and lesions of Epithelioma Contagiosum will appear after an incubation of five or six days.

"In relation to the nature of the virus, it is said from researches made by several investigators, that it has been made evident that the causal agent belongs to the group of filtrable viruses, like those of horse-sickness, small-pox, sheep-pox, swine fever and several other diseases. But that, however, it would seem that the virus of chicken-pox is larger than that of some of those diseases, and that it is apparently larger than the causal agent of horse-sickness for instance, the virus of which is able to pass through very fine porcelain filters."

Mr. Jowett concludes his article with the treatment. On the occurrence of an outbreak of chicken-pox, all diseased birds should be isolated. Fowl houses should be cleaned and disinfected. In the early stages of the disease apply frequently iodine or carbolic acid solution. When the mouth and throat are affected, swabbing with a solution made of 5 parts of creolin or carbolic acid, and 100 of each glycerine and water. Birds dying with the disease must be buried deeply or burnt.

\* \* \*

TARTAR EMETIC AS AN ANTHELMINTIC.—The use of tartar emetic as an anthelmintic is not generally recommended. French and English authors seem to ignore it. Winslow, in his last work on Therapeutics, tells us that: "The Germans prescribe tartar emetic very commonly to horses as a parasiticide against

round worms and tape worms. Four or five drachms are given in aqueous solution to the fasting animal and followed by the administration of a dose of oil." And yet is it so frequently used by German practitioners? It must be admitted, however, that such use is not considered by all under the same light. Views differ and some of them I find extracted from the *Deutsche Tierärztliche Wochenschrift* and reproduced in the *Revue Generale* which, if they do not settle the question entirely, present conclusions worth noticing.

Professor Moller is the first who, after saying that tartar emetic is one of the most used anthelmintic, recalls the facts that the therapeutic dose is so close to the toxic, that prescribing it demands the greatest attention. If the classical dose is 20 grammes for the horse, experience has taught that 8 or 10 grammes may produce serious disturbances, although in most cases helminths are expelled with such doses. Intoxication, however, may occur five or six hours after the administration of the drug. The animal acts as if he had laminitis in all four feet, he is lame and unwilling to stir. Besides the local symptoms, pain and heat, there are general serious manifestations: raising of the temperature, congestion of the mucous membranes, hurried breathing, general twitching, accelerated pulse, etc., etc. The general treatment of laminitis gives relief after a few days. Moller has observed all those manifestations in a great number of heavy draught horses, aged 4 to 10 years, which received from 8 to 12 grammes of tartar emetic. Divided doses are harmless to horses, but they are also for the parasites. On account of these results, Moller has given up the use of the drug.

Let us consider the opposite opinion. Fixte in the same Journal contradicts in the most positive manner the statements of Moller. He has never seen the accidents mentioned with doses of 20 grammes given in solution in water 200 or 300 grammes. One day by error 80 grammes of the emetic was given to a horse. No bad effects resulted.

Reissinger, answering Moller, who said that he had seen laminitis with doses of 10 and even 8 grammes, says that he has

administered more than 600 doses of this drug in quantities varying between 15 and 32 grammes. He has never met with an accident. The good effects as an anthelmintic are always most satisfactory.

Dorn also brings his contribution to the question. He has used the drug for many years, and has never observed the slightest accident. Twenty grammes is the dose. Once with 80 grammes a horse had a little diarrhoea, but in all the cases the antiparasitic effects were excellent. In the last case where 80 grammes were given, more than 1,200 helminths were expelled. How can this difference of opinion be settled and the toxic effects mentioned by Moller explained? Practitioners will!

\* \* \*

SYPHILIS IN RABBITS.—I have on various occasions in these pages called the attention of our readers to questions of comparative medicine as it has been my good luck to meet them. The experiments of Dr. Piorkowsky, trying to give syphilis to horses and rabbits by intra-venous and sub-cutaneous injections of virus; those of Prof. Metchnikoff with the same disease in monkeys, have been recorded in the REVIEW. To-day I will mention those that have been made by a veterinarian, also a graduate of medicine, D. G. Roussel, where he used syphilis as the disease to experiment with, and, again, rabbits in preference to any other animals.

This study of Experimental Medicine has been related in a large pamphlet under the title of "Syphilis in Rabbits." In it a general review of all the works done previously by others is presented rapidly, and then the whole history of the experiments. These consist in inoculations of syphilitic virus in three different manners: Intra-corneal, corneal scarifications, and intra-ocular inoculations. The symptomatology following these various operations, the incubation and march of the disease, the pathological anatomy are minutely described, as well as the results obtained by the passage of the virus in series and infections of other animals which formed a solid basis for evidences found as to the essen-

tially syphilitic nature of the interstitial keratitis and of the other lesions found in all the animals experimented with. Attempts at immunization have also been tried, but so far without satisfactory results. The conclusions of those very interesting questions which are not only of value in the domain of experimental medicine, but also in that of researches for the prophylaxy of this disease, are briefly resumed as follows:

“ Syphilis can be inoculated to rabbits. It gives local lesions on the cornea, the testicle and sometimes the skin. It may become generalized. It produces four kinds of keratitis. The living treponema is always present in large quantity in the corneal structures. Very virulent material must be used to succeed in the inoculations. Inoculations in the anterior chamber of the eye does not succeed as well as intra-corneal inoculations. Syphilitic keratitis of rabbits could be used as a means for differential diagnosis in human medicine. Syphilitic virus can be inoculated in rabbits in series and thus material for experimentation be always on hand. Attempts to immunization have failed so far.”

There is no doubt that Dr. Roussel has done a good work with these experiments. What remains now is to have them controlled by others.

\* \* \*

EVACUATION OF TUBERCULOUS BACILLI BY BILIARY SECRETION THROUGH THE INTESTINES.—It is a well-demonstrated fact that tuberculous animals pass in their fæces variable quantity of bacilli. Prof. Calmette and Guérin have undertaken researches to find out if, in an animal organism recently infected through the circulation and carriers of close tuberculous lesions, the bacilli found abundantly and by intermittances in the digesta were not eliminated by the liver and poured in the intestines with the bile. They communicated the results of their researches lately before the Académie des Sciences. They injected in the marginal vein of the ears of seven rabbits one centigramme of bovine bacilli held in fine emulsion. The rabbits were then killed successively 24, 48 hours, 3, 4, 5, 6 and 7 days after the inoculation and the

contents of their gall bladder was taken aseptically, centrifugated and injected under the skin of several guinea pigs. After a lapse of 45 days these were killed and on their post-mortem the examination revealed the presence of a large number of tuberculous lesions. Thus was given the demonstration that the hepatic gland can eliminate bacilli introduced into the circulation and pour them in the intestines with the bile. But bile, having the power of modifying the sero-fatty envelope of bacilli, as a consequence it promotes the absorption by the intestinal mucous membrane.

These facts have a great practical importance, not only because subjects whose biliary secretions are bacilliferous are exposed to auto-reinfection by intestinal resorption, but also because the dejections of subjects, carriers of latent or occult lesions, can become a means of disseminating tuberculosis. Under these conditions, it becomes necessary to have the manure of animals, which have reacted to tuberculin, if it cannot be destroyed, at least that it should be spread only upon lands that are to be plowed and not be allowed to remain on fields used altogether for pastures.

\* \* \*

ANTITETANIC SEROTHERAPY.—The use of antitetanic serotherapy may not be as frequently resorted to in human medicine as it is in veterinary, but yet it is used. However, the results have not been as satisfactory in the first as in the second. In the *Presse Medicale* there was a while ago a review on the subject, where it began by saying that the observations as having been made in veterinary surgery upon the value of this therapy seemed contradictory to those of human practice. In animals, tetanus is most ordinarily fatal and the antitetanic serum has no curative action. But it is a sure preventive if injected before or shortly after the formation of a wound. On the contrary, in man the curative effect is possible and the prevention uncertain.

In relation to the curative action, the contradiction is only in appearance. Indeed, human tetanus may recover spontaneously, says Dr. Lazane, and most of the cases that got well were

cases which would most likely recover without it. And as far as intratracheal, intrarachidian or intravenous injections, the results have been about the same in both medicines.

The preventive value of the serum is quite certain, but not absolute. Tetanus has sometimes followed an injection of serum, but because its effects are short in duration, and because it has been given under special conditions. The action is very limited and consists in a combination with the toxin in the circulation of the blood so as to neutralize it. Its duration being short, its effects pass off quick and, if after eight days, the tetanic wound still exists, the secreted toxin finds no more the element to neutralize it, it is then necessary to inject not only large doses of serum, specially in anfractuous and complicated wounds, but also to renew the injections every eight days.

Various accidents have been observed in using the serum. Erythemas, urticaria, cedematous swellings, such as those that may follow the injection of serum from horses in the organism of man. However, others more serious have been observed with repetitions of the injections; but they are never dangerous.

To resume, preventive serotherapy of lock jaw is good, but it requires to be applied with method and severity. It will not replace the work of the surgeon, but simply tends to neutralize the toxins, while waiting for the realization of complete asepsy of the infecting wound. It seems certainly that for both medicines the general observations and conclusions are the same. Prevention certain! Curative action—?

\* \* \*

THE DOCTORATE FOR VETERINARIANS.—This question has been agitated for some time and the advantages as well as the objections have found quite freely opportunities for discussing it in all our professional journals. While many, perhaps the majority, consider that it would add much to the social standing of veterinarians, some advance specific conditions under which the title should be granted, and among the principal ones are the general reform of the work done by the schools, different arrangement



of the curriculum, longer attendance to the schools, etc. All of these are considered by many as objections which, after all, are of doubtful value. At any rate, it is certain that the subject is of sufficient importance as long as we see it announced as one of those that will be treated at the coming Congress at La Hague. Three of the most eminent men in the profession are reporters, and from their report there can be but one sure certainty to follow, viz: the advisability for the granting of the degree and the proper conditions and requirements under which it can be obtained. With Dr. F. Hutyra, of Budapest, Prof. E. Leclainche, of Toulouse, and Dr. R. Schmalz, of Berlin, the reporters before the Congress, the question will receive the proper attention and final settlement that it deserves.

In the meanwhile it seems as if in some parts of Europe the Doctorate has already gained its cause. Favorably considered in Italy, I believe, two or three institutions in Germany and Austria have accepted the privilege, and at last it seems as if in France the proper authorities are to be approached so as to obtain from them the proper authorization. Here the thing can easily be done as, after all, the schools being under the jurisdiction of the Secretary of Agriculture, he is the one to decide. Since some time a committee has been appointed by the federation (read General Association) of the veterinary societies and syndicates of the country to the effect of arriving at a settlement of the question. This committee is about ready to go before the Secretary of Agriculture, who can at his pleasure grant the request and permit that the diploma issued by the French veterinary schools shall be one making the holder a Doctor.

The move is quite popular and will probably succeed. But the Administration is so slow! I suppose, however, that the time will come when some French graduate who will go and try practice in the States will sign himself X—D. V. S., just as many of our American colleagues do, unless it is D. V. M.

\* \* \*

**HORSE-MEAT AGAIN.**—Is horse-meat deserving its reputation, considered to the point of view of food and as a therapeutic

ingredient, is the question that Dr. Martel asks in the "Hygiène de la viande et du lait."

According to Pagès, "If one would believe chemical analysis, horse-meat should be healthy and very nutritious, but if, on the contrary, one takes in consideration practical observations, it is neither one nor the other," and further on he adds: "All those that have fed for some time on it have noticed its great digestibility, but also how little it holds on the body; all those that use it continuously are more exposed to digestive troubles of infectious nature than those that eat beef or mutton; in dogs the objections to the use of such meat are still more manifest. Not only is it but little nutritious, but often gives rise to abundant foetid diarrhœa."

And yet to-day recommended by physicians to be eaten raw, it is boomed as a therapeutic agent of qualities superior to the meat of steers because that, if taken for some time it may give rise sooner or later to an invasion of tæniasis with the *tænia saginata*, and also superior to mutton, which is too expensive. But at present horse-meat is as dear as any other.

So as to accept the results to be expected from suralimenta-tion, it must also be admitted that meats likely to bring those results be in possession of special conditions also; that they should come from animals of different species, sufficiently fat, in good condition of flesh, healthy, adult and not overworked, and that they should have been the subject of a good sanitary control and properly prepared.

Does horse-meat come generally from such animals? Generally solipids which are killed for that purpose are old, have had a hard life of work, are worn out; and although they, almost without exception, are submitted to the control of the sanitary service, horse-meat will never have the succulency nor the taste or nutritious value, nor the therapeutic properties that are allowed to it in our days, until the time has come when horses will be bred, raised and fattened exclusively for human food, and will be killed in full force and age as is done with cattle.

BIBLIOGRAPHY: THE COMMON COLICS OF THE HORSE.—Their causes, symptoms, diagnosis and treatment, by H. Caulton Reeks, F. R. C. V. S., although published in London by Bailliere Tindall and Cox, came to my desk in a roundabout way through our American publisher, Alex. Eger, of Chicago. This is the second edition of the work. When a reviewer has seen a book at the time of its issue, his reviewing of a second edition is much simplified. Unfortunately I have not seen the first edition of Common Colics, and I have to rely on the preface given by the author to find out what improvements he has made in his work.

In that preface I read that the book was first published six years ago, that it had a second large reprint rapidly exhausted, and that the second edition was called for. This is a rather good evidence of the quality of the work. Then the writer tells of the numerous letters that he has received from members of the profession, indorsing what he names the "stimulating treatment of intestinal impaction," and calls the attention to an article which he has introduced in the appendix: "The use and abuse of sedatives in the treatment of the equine colics." And then he mentions another addition, perhaps the most important, he says, in Chapter X. on "Sub-acute Obstruction of the Pelvic Flexure of the Colon." He speaks of diagrams which have been inserted with the chapter that treats of surgical anatomy; he describes and illustrates in the chapter on Gastric Tympany, a new stomach tube, and finally mentions one important alteration, dealing with a change of opinion which is fully set out in the appendix.

This tells in the preface of the change that will be found in this second edition. Those who, like me, see the book for the first time, will find that the subject is divided into 18 chapters besides the appendix, which is composed of three parts. The definition of colics, general anatomy of the abdomen, the mode of examination, occupy each one chapter. Etiology fills two, one for predisposing and the other for exciting causes. Gastric troubles (Impaction, Tympany, Rupture) occupy three chapters. The sub-acute obstruction of the double colon two chapters. That

of the single colon and that of the small intestines each one chapter. Flatulent colics, enteritis and superpurgation have each one chapter. The treatment by intestinal irrigations in obstruction of the colon, the surgical treatment in intestinal obstruction, occupy also one chapter. The treatment of colics in young and unbroken animals with the appendix, complete this little book of over 250 pages, where some fair 15 plates are reproduced.

It would not be proper for me to express an opinion as to the quality of common colics of the horse. It has received the written approval of a large number of practitioners, and as it is to them principally that the book is destined to go, these certificates are sufficient. But if I have some impression to give it is this, that I approve very much the effort made by Mr. Reeks. Colic is one of those difficulties which are sometimes so hard to control, where diagnosis is often so doubtful, whose pathology remains so often in darkness that certainly a *special* work can be but a good thing. It would scarcely be possible to make a specialty of this part of our medicine, but one who tries to write a special work on some special forms of colics is deserving well of the profession. I am sure that this is a verdict that will be granted to Mr. Reeks even by those who will not be convinced of his ideas nor approve of his therapeutic methods.

"Common Colics of the Horse" is certainly a good addition to veterinary literature.

\* \* \*

RESTRAINT OF DOMESTIC ANIMALS is a handsomely gotten up work by George R. White, M. D., D. V. S., of Nashville, Tennessee, who is the author, publisher and editor, and which, according to a card that came in the book, "contains over 300" pages and illustrates and fully describes every known means of "restraint of the horse, ox, dog and hog." And, continues the card, "is by far the best illustrated book ever written in America" on any branch of veterinary science. It is sold by the author "and all veterinary book sellers. Price, \$3.75."

One must not, after reading the contents of this card, come to the conclusion that Dr. White claims to have written THE veterinary book by excellence. No. He is a beginner at book writing; he has said to me that he was only an amateur. And certainly he is or he would not have written that card. But he had a great desire to show students and practitioners the importance of that part of veterinary operative surgery. He was so convinced of it that he says that: "Not only does the restraint "problem confront and concern the surgeon alone, but his client "and patient are also directly interested \* \* \*" and again when with right he adds in his preface: "Perfect or even good "surgery is impossible without perfect restraint. The surgeon "is no better than the restraint method which he uses." It is true that there is some exaggeration when he continues: "It is "rare to see a surgeon handle a knife any more skilfully than "he handles his restraint technic. Imperfect restraint means an "imperfect operation."

Evidently with these ideas, the author must have thought it well to compile his work with the conviction that it might be useful. It no doubt will. Any book is in its way.

Dr. White has, however, I think made some errors, and one amongst these is when he says: "I do not care to be held responsible for the imperfection of many of the restraints and "subjections illustrated and described." Why? How is the student or the practitioner to select? They both have been made more or less acquainted with these modes of restraint, when they were at college, or the course on Operative Surgery of the school they attended was very incomplete, and as, after all, it would be by putting these means to test and practice that they could judge by themselves of their qualities, it seems that not knowing exactly which may be good or which may be bad, hesitating between what he has been shown while at college and what he has read in Restraint, the poor student or unfortunate practitioner will be in a sad quandary as to what to do and if he refers to Dr. White, he is told nothing. Well, leave that as it may.

Restraint is divided into five parts. The two first relating to horses, with one the animal is in the standing position, and in the other in the recumbent. The other three parts are devoted to restraint of the ox, of the dog and of the hog. Each has one chapter. Do not cats bite and scratch? Do they not need restraint also?

In the restraint of solipeds in the standing position, the reader can pass in review all the various forms of twitches, gags, war bridles, halters, leather and rope appliances, etc., with which he may have become acquainted in reading books in surgery, training, horse breaking and taming, etc. Recumbent position speaks to us of hobbles, casting, securing horses with ropes and operating tables. Referring to these last some of the accidents that may occur are mentioned. But are they not as common, if not more, with the mode of casting by hobbles than with the operating table. Good authorities who have used several kinds of tables tell me that they are less; some say almost unknown.

The part 3 applies to cattle and is divided into two chapters for standing and in the recumbent position. For the dog also there are two chapters. Hog has only one.

The illustrations of Restraint are 332 in number. Some are very good, others less so. The majority are correct. A few are not and impossible to apply, if attempted as drawn. Taken altogether, the attempt of Dr. White with all its faults and deficiencies deserves credit. It may not prove as beneficial as the author certainly endeavored to make it. But its perusal will no doubt give the reader a most valuable impression, and is one that every teacher on operative surgery ought to have given to his students, namely: Be thoroughly familiar with your manipulations in restraining an animal, be sure that you will not make a mistake, or commit a blunder as to the one who looks on at you, owner or simply looker-on; it is a fault that may injure your reputation sooner or later.

Students and practitioners must read Restraint, but they must also make themselves perfectly sure of every step required.

Of course this applies principally for those who have to cast with hobbles and secure with ropes, which are certainly the majority. Operating tables with all their superiority are yet, and will remain for a long time, useful only under special conditions, and will not take the place of the old methods except in those conditions.

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SHORT BIBLIOGRAPHIC NOTICES.—Bulletin 119 from the Texas Agricultural Experimental Station resumes the work of Docts. M. Francis and R. P. Marsteller on *Infectious anemia*, with several good illustrations of sick animals:

“Infectious anemia is a very fatal disease of horses and mules characterized by intermittent fever and progressive emaciation without apparent cause.

“The infection occurs in the blood and can be conveyed to other horses and mules by sub-cutaneous or intra-venous injections. We have not been able to convey it to cattle, sheep, goats, pigs or dogs.

“The clinical symptoms greatly resemble those due to trypanosoma and piroplasma, but we have not yet found organisms of this character in the blood.

“Virulent blood which has been filtered through porcelain will reproduce the disease, therefore we think the specific germ belongs to the group of so-called ultra-microscopic organisms.

“The blood of infected horses retains its virulency more than a year after its primary infection.

“Healthy horses have mingled freely with sick ones for months without contracting the disease.”

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Bulletin 63 from the Experiment Station of Nevada contains report from Dr. Winfield B. Mack, who is the bacteriologist and veterinarian of the Staff station. He records an interesting case of chronic Hydrocephalus, one of Pervius Urachus, Traumatic

Pericarditis and mentions others of minor importance. This department is of recent organization.

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Finally my attention has been called in April to a plea presented by the Committee on Education of the Pennsylvania State Veterinary Medical Association. The analysis of the plea brings out powerful and important arguments proving the unavoidable obligations of that state, and they apply to any state, to assist veterinary education in providing for the support of a veterinary college in Pennsylvania. The move made by this committee is deserving success and veterinarians all over the country will wish for the State of Pennsylvania to grant that which is asked and which is very small in comparison with the value of the good that would follow.

A. L.

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## PROTECTION AGAINST THE FRAUDULENT USE OF TUBERCULIN.

It has been frequently stated at veterinary congresses that mallein is a fruitful cause of the *spread* of glanders; and when such statements have been made they have usually been made by those who thoroughly appreciate the value of that agent in the *control* of glanders. Obviously it is only responsible for the *spread of glanders*, through *fraud*; and the same is true of tuberculin. An example of the fraudulent use of tuberculin is narrated in *Horn and Hoof* as follows:

"There appeared in an Eastern exchange not long ago the history of a transaction where a buyer attended the annual sale of one of the leading Shorthorn breeders of America and bought cattle with the understanding that they should be submitted to the tuberculin test and any failing to pass would be retained by the seller. Immediately, or within a few days after the sale,



the cattle bought were tested and given a 'clean bill' by the veterinarian. They were thereupon accepted as sound by the new owner and removed to another state. A few weeks later they were again subjected to the tuberculin test and every one reacted.

"The seller was notified of the results of this last test, but declined to take the cattle and reimburse the purchaser; whereupon, the purchaser not caring to have diseased animals in his herd had them destroyed under veterinary supervision; and upon examination these animals proved to be in the advanced stages of tuberculosis.

"Now what does all this show? Why it shows that the seller of these cattle had been guilty of one of the most flagrant crimes that a cattle vender could be guilty of. It shows that these cattle shortly before sale had been surreptitiously inoculated with tuberculin, the vender knowing full well that should a test be demanded by any purchaser at the time of sale there would be no reaction, thus allowing him to palm off on an unsuspecting public a lot of diseased stock.

"It is well known to those familiar with the uses of tuberculin that after inoculation with the serum an animal though diseased will not react to a second test if applied within several weeks, and this knowledge put the seller of these cattle in a position to defraud his patrons.

"Such a transaction as this puts a serious aspect upon the use of tuberculin as a diagnostic agent; and the only way to prevent its fraudulent use, as we see it, is for the government to take upon itself the sole manufacture of tuberculin and to restrict its use absolutely to government agents. Under existing conditions there is nothing to prevent any person from supplying himself with a syringe and tuberculin and keeping his stock in a constant state of immunity to the test."

The above narration of fact certainly does put a serious aspect upon the use of tuberculin and stimulates thought in those confronted with such conditions to evolve plans to overcome them.

Earnest men everywhere have been giving this matter careful consideration. The editor of *Horn and Hoof* concludes his narration of the fraudulent use of tuberculin by saying that the only way to prevent its fraudulent use, as he sees it, is for the government to take upon itself the sole manufacture of tuberculin and to restrict its use absolutely to government agents. We assume that he refers to the federal government. He says further, that under the existing conditions there is nothing to prevent any person from supplying himself with a syringe and tuberculin and keeping his stock in a constant state of immunity to the test. Unfortunately there is much truth in his conclusions; but we believe we can begin to see a gleam of light ahead and hope by following it to come out into broad daylight where crime is not so easily committed. That gleam of light is in the form of a law that has recently become operative in the State of New York, a copy of which is printed on page 482 of this issue of the REVIEW. This law is the outcome of conditions similar to those related by our esteemed contemporary that have forced themselves upon the Department of Agriculture in the Empire State, where the commissioner, thoroughly convinced of the efficiency of tuberculin in the control and eradication of bovine tuberculosis, realized that he was not getting the results that should accrue from its application through his department by trained veterinarians. Investigation revealed the true reason, viz., fraudulent use of tuberculin.

Section 64a of chapter 588 of the Laws of New York, which is an act to amend the agricultural law, in relation to tuberculin, issuing certificates relative to tuberculin tested cattle and the branding of tuberculous cattle had its birth in the Department of Agriculture of that state, and is the result of a careful study of the adverse conditions and of the requirements to overcome them by the commissioner of agriculture himself; and we commend every veterinarian to study it carefully. It may have its defects; it may have weak points, but we have failed to find any, and believe its emulation by every state would entirely eliminate the dangers referred to, throughout the country.

The value of the tuberculin test has been steadily increasing in popularity among laymen in the Empire State, as stock owners have recognized the singleness of purpose on the part of their commissioner of agriculture, whose one aim has ever been to serve the interests of agriculture. This, and the commissioner's recognition of the value of the veterinarian to agricultural industries, will materially aid in the operation of the new law; and we predict the accomplishment of much good.

The branding feature in the bill may meet with disapproval by some; but those who honestly desire to abide by the law, and have clean herds, will find no objection to it. Believing that this law will eventually result in benefiting the stock-raising interests of the entire country, we have aimed to bring it to the notice of veterinarians and agriculturists generally.

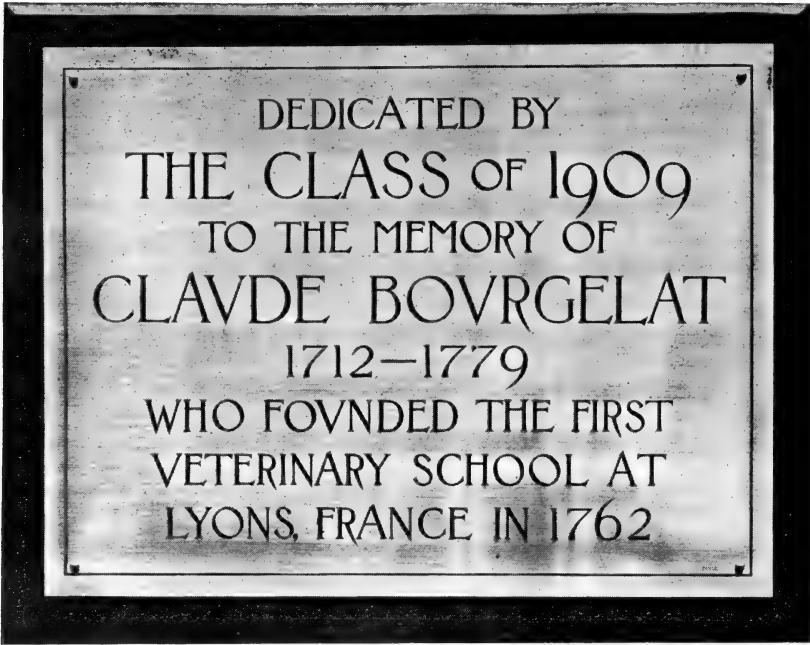
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### BOURGELAT'S NAME HONORED AT U. P.

On June 12th the University of Pennsylvania was the recipient of a handsome tablet dedicated to the memory of CLAUDE BOURGELAT, founder of the first veterinary school, at Lyons, France, in 1762, from the senior class of the veterinary department. The exercises incident to the presentation took place in Houston Club. The tablet was presented by Edward A. Cahill, president of the class of 1909, and was received by Prof. Harger, of the veterinary department. Other addresses were made by members of the faculty, which were followed by refreshments and dancing. Through the courtesy of Dr. Cahill, we have received a cut of the tablet, which we here reproduce, also a copy of a brief resume of Bourgelat's life, by Dean Pearson, which follows:

Claude Bourgelat was the real founder of the veterinary schools. Bourgelat was born March 27, 1712, at Lyon, and died January 3, 1779. He sprung from a family of wealth and position and was educated for the law. It is recorded that soon

after he entered upon the practice of his profession he won a case, which subsequent events proved to be unworthy; and so rather than continue as part of a system in which such an injustice could occur, he left the bar and, being guided by his life-long fondness for horses, joined the army as a cavalry officer. He devoted himself earnestly to the study of all hippological subjects, including anatomy and medicine. After he had been appointed Chief of the Army School of Equitation in Lyon,



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through the aid of his friend Bertin, he was enabled to lay before the Controleur of Finance a proposal for the establishment of a school in Lyon, the purpose of which should be to develop knowledge of and to teach hippology and also facts in relation to the care, rearing and diseases of all domestic animals. For these purposes, a public grant of 50,000 francs was made August 5, 1761, and permission of the government was given to establish

such a school. Bourgelat was permitted to use for the following purposes the funds so provided: to rent a building to equip a laboratory, farriery, an apothecary, hospital stables, a dissecting room, a lecture hall and a botanic garden, and also for the purchase of utensils and instruments.

The new school was opened January 2, 1762, in a building in Guillotière, a suburb of Lyon. The fame of the founder was such that the first classes were attended not only by students from France, but also by a number of foreigners, including three Danes, three Swedes, several Prussians and Austrians and ten Swiss. A number of the foreign students were sent to Bourgelat's classes at the cost of their respective governments.

The difficulties that confronted Bourgelat in organizing this pioneer school were enormous; there was no veterinary literature of any importance, and there were no men trained to teach veterinary subjects. The first corps of teachers was composed of an abbé, army officers, riding masters and physicians, among whom was the celebrated surgeon Pouteau. Necessarily, the early work of the school was imperfect and, to some extent, was disappointing, still it was of such manifest value, especially in connection with the control of the prevailing animal plagues, that Louis XV. conferred upon the institution the name of "The Royal Veterinary School" and the right to receive all appropriations, funds and bequests for the support of work of the character in which it was engaged. Upon Bourgelat was conferred the title of "Director and Inspector-General of the Veterinary School of Lyon and of all other veterinary schools established, or to be established, in the Kingdom."

The advantages springing from the institution were recognized to be of such importance that Bourgelat was requested by the government to organize a second veterinary school. For this purpose, the Castle of Alfort, on the Seine, near Paris, was purchased December 22, 1765, and the Veterinary School of Alfort was established by Bourgelat, with the help of some of his best pupils from Lyon, in October, 1766. Both of these institutions

have grown steadily from the time of their foundation until the present, and their influence on the agriculture and the national well-being of France are recognized as of immense value.

The success of the French experiment in veterinary education was such that within a few years after its inauguration, veterinary schools were organized by the governments of all the leading countries of Europe, and all of those on the Continent were erected and all are still maintained as public institutions, at State expense. In almost every instance these schools were planned after the French model by men who had studied under Bourgelat at Lyon or Alfort.

For these reasons, we must regard Bourgelat as the father, and France as the mother of veterinary education. Statues of Bourgelat were erected on the grounds of the veterinary schools in Lyon and Alfort, and were dedicated with appropriate public ceremony in the years 1876 and 1879, respectively.

The influence of Bourgelat, through the French Schools, has been potent in shaping the development of veterinary affairs in this country through the work of several of our most distinguished colleagues who received all or an important part of their early professional training at Lyon or Alfort: Huidekoper, Law, Liautard and Salmon.

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VARIATION OF ANTITOXIN UNITS IN TETANUS ANTITOXIN.—At the recent Atlantic City meeting of the American Medical Association, Anderson, of the Public Health and Marine Hospital Service, read a paper on "Tetanus Antitoxin," in which he stated that his experiments showed that the tetanus antitoxin prepared for veterinary use contained anywhere from 17 to 25 antitoxin units per cubic centimeter, while similar examinations of tetanus antitoxin prepared for medical use contained from 150 units to 600 or even 700 units per c.c. The above statement may explain to the veterinarian a plausible reason for some of the unsatisfactory results obtained from this product and bespeaks for the same supervision by our Federal Bureau of Animal Industry over biological products used in veterinary medicine as the Marine Hospital Service now has over similar products used in human medicine.

# ORIGINAL ARTICLES.

## DENTISTRY.

BY R. N. GORDON DARBY, D. V. M., FORT PLAIN, N. Y.\*

The term "Dentistry" or "Dental Surgery" embraces everything pertaining to diseases of the teeth.

It would seem that this department of our work has been neglected to some extent, especially in our herbivorous animals.

That many of the digestive disorders and general unthriftiness so often found in our domestic animals arise from improper mastication due to disorders, or diseased conditions of the teeth, there can be no doubt.

To-day we must realize more than ever, that any serious disarrangement of the dental system of the soliped must be considered an unsoundness as much as a defect of the eye or any lameness.

Diseases and malformations of these organs are common and frequent, and most careful examination of the teeth is of particular importance in the proper care of animals, young as well as old. In examining the mouth of an animal, it should be secured as the case may demand. The speculum, the sound and the electric lamp should be used together with careful palpation. There is no doubt that an examination can be made without these instruments, but it requires much practice, and the result is apt to be the failure to discover some important defect.

In order to diagnose and handle a case of dental disease properly, we must have a thorough knowledge of the pathology of these parts. Also we should have a good understanding of their development, their anatomical relations and their physiology. A brief consideration of the subject will therefore be desirable.

The first indication of the teeth is the formation of the dental ridge, this is a semi-circular ridge showing on the maxillary and

\* Paper read before the Nineteenth Annual Meeting N. Y. S. V. M. S., Utica, N. Y., September 3, 1908.

mandibular arches. Upon the external side of this ridge or the side corresponding with the cheek, small collections of ectodermic cells are formed which correspond in number to the temporary teeth. These groups of cells grow downward, forming the enamel-sac, while from below a group of mesodermic cells, known as the dental papillæ, grow up to meet them. This dental papilla forms the pulp of the tooth and from it the dentine is developed. As it grows upward it becomes vascular and as it comes in contact with the enamel sac it takes its shape, whatever it may be. While this process is being carried on the mesodermic tissue surrounding the dental papilla condenses to form the follicle, which develops until it encloses the tooth. The follicle of the internal layer develops the cementum or crusta petrosa, around the roots of the future tooth, while the external layer forms the alveolar periosteum. The permanent teeth are developed on the internal side of the dental ridge in the same manner, the last three molars (permanent) being developed backward toward the articulation. Before eruption we have then a fold of dentine covered by a fold of enamel, which in turn is covered by the cementum. When erupted and the cap is worn off we have these folds exposed in two layers. Between the teeth the connective tissue becomes first fibrous, and later by the process of ossification forms the alveoli.

Each molar tooth when fully developed presents a wearing surface more or less irregular and inclined from the horizontal; together with four sides, known as the crown. The neck is that portion connecting the crown with the fangs. The fangs are buried in the alveolar cavity of the maxillary bone and are perforated at their extremities for the passage of nerves and vessels into the pulp. The fangs vary in number; the first and last grinder above and below have three; the remaining molars above have four each while those below have but two. The alveolar cavity is lined with alveolo-dental periosteum, which resembles true periosteum, except for its softness. Surrounding the teeth is the mucous membrane of the mouth, which is commonly known



as the gums. This portion of the membrane is very thick and contains no glands.

The wearing surface is of particular interest on account of its susceptibility to pathological conditions. It shows the constituents of the teeth in their irregular layers. The external layer of cement surrounds the external enamel, which in turn covers the dentine. Still inside is another layer of enamel, forming the infundibulum, which is filled by what is known as the internal crusta petrosa. These layers of tooth tissue, varying greatly in density, give the surface that roughness which is necessary to mastication. This crusta petrosa often fails to seal this infundibulum, leaving open the channel to the enamel at the bottom of the infundibulum through which food particles may pass, decompose, dissolve the walls of enamel and dentine and reach the pulp cavity, through which infectious substances may enter. Or, when the cap wears off, the dentinal plates may not have fused, and infection enters at once between them into the pulp.

The incisor teeth are somewhat similar in structure, but differ in shape. The grinders are differently arranged upon the superior and inferior arches of the maxillary bone, the first two grinders on the lower arches being about two inches apart, while the last two are nearly four inches apart. Above, the arches are much wider; the corresponding first molars being three inches apart while the last are from four to four and a half inches apart. From this it is readily seen that while at rest these teeth do not correspond, and that mastication can only take place on one side at a time. The tables of the lower molars show an average difference of about three-eighths of an inch, the external edges being the lower.

The sensory nerve supply of the superior set is derived from branches of the superior maxillary, while branches of the inferior maxillary are given off to supply the teeth of the lower jaw. These trunks are branches of the fifth cranial nerve, which also gives motor branches to some of the muscles. The blood supply of the teeth of the upper jaw is derived from the superior

dental artery, a branch of the internal maxillary. The lower jaw is supplied by the inferior dental artery. These arteries form terminal branches of the internal carotid.

The physiological functions of the teeth are prehension and mastication. The incisor teeth in the soliped aid in the prehension of food. By these we are able to judge with more or less accuracy the age of the horse, as long as the infundibulæ remain unworn. As the animal grows older the angle formed by these teeth becomes more acute, while the wearing surface changes from a rectangular to a triangular form. The teeth of herbivora are being pushed up from below as fast as they wear, and as age comes on the teeth become shallow, while the edge of the jaw becomes sharp. As the compound molars perform the essential functions of mastication, their surface must be rough. This condition is brought about by natural differences in the degree of hardness of the tooth substances. The angle of the molars plays an important part in mastication. Owing to the anatomical arrangement of the jaws in herbivora, they can only chew on one side at a time. Beside the lateral movement of the jaw, there is a rotary movement which plays an important part in the wearing of the teeth.

The symptoms which usually bring the case to us for examination or treatment may often vary, but are generally included in the following: The animal may appear run down, with a dull coat, and is often hide-bound. There will be a history of one-sided driving, pulling on the bit, quidding of food, slow eating. Hay may be chewed for a while, but ejected in quids. Ptyalism is a very common symptom. Then we have the characteristic disagreeable odor of decayed teeth.

After the diagnosis has been made we must choose our own method of confinement and handling according to the severity of the case. In all severe cases where there is evidence of great pain, general anesthetics should be used. This necessitates casting or the use of the table, the latter, of course, being preferable. In less severe operations the stocks are a very handy and attain-

able contrivance, and we find that when used together with a capsule of chloral or a hypodermic of morphine they give excellent results, as often we prefer the animal in a standing position. In place of the twitch, a rope running through a stationary pulley, and having a loop in one end to be placed in the mouth can be used to advantage in holding the head elevated. For simple operations the animal need not be secured, but if available the stocks are safer.

Clinically the scope of dental surgery may be included under two main divisions: deformities, including irregularities in development, replacement and wear, and disease.

Supernumerary teeth are found in most of our animals, incisors being most common. Some authorities have noted as many as a double row. The supernumerary molars are less common, although they have been noted, usually behind the third molar or along either side. Often the milk teeth are retained and cause the permanent teeth to become displaced or deformed. These milk teeth lie in front of the permanent teeth when retained, and should be removed, care being taken not to injure the jaw. Supernumerary teeth are the result of the development of more than one germ, or a double follicle. These teeth do no harm unless they grow up into contact with some soft part; then they should be either removed or cut off. In this connection we may also speak of the so-called wolf teeth. These appear to be supernumerary, but are said by some to represent the premolars which have disappeared under civilization and the use of the bit. The ox, we notice also, has this inter-dental space. We find that they do no harm, outside of possibly causing some irritation from contact with the bit. Also we find other pronounced views among our clientage, it being a common belief that they bring on trouble with the eyes; and as a general rule they are removed.

No end of deformities have been met with. The molars have sometimes been found growing horizontally out into the cheek and across the mouth. Too much space between the teeth may cause disease in the molars. These teeth should stand close together to prevent food from entering the inter spaces.

Perhaps the most common deformities are found in the so-called false position or parrot mouth, either the upper or the lower jaw being too long or too short. This comes from irregular development of the jaws, and is known respectively as the undershot (prognathous) or overshot jaws (bradynathous). These cases often prove serious, not only are these animals unable to use their incisors in the prehension of food, but the overlap is often so much as to cause the first or last molar on either side to project into the opposite jaw. These projections must be cut down, care being taken not to open the pulp cavity. The projecting incisor may be reduced by a file or an incisor cutter.

The most common result met with in the wearing of the teeth of herbivora is the sharp mouth. This condition is brought about in the following manner: We have shown the natural angle and relative width of the jaws. From this we may readily see that these sharp angles come from the natural wear, and cannot be said to be pathological. The movement of the jaws and the consistency of the tooth bring out these sharp points of enamel, the dentine being much softer. These points may occur on some individual tooth whose substance seems to be softer than others, or an entire row may become sharp. If they occur on the lower rows, the tongue is said to be liable to laceration; if above, the cheeks. We often see what appear to be scars on the buccal membrane, corresponding to the edges of the upper teeth, but seldom any recent laceration is noticed back of the first or second molar. There may be a question as to the vulnerability of this membrane; that is, by the teeth alone, without the bit or other foreign substance. Horses whose teeth are sharp often drive on one line, or pull into the bit, slobber or quid the food. Ruminants do not often show the sharp points in a line on the inner and outer edges of the molars, as the movements of the jaws are more horizontal. Owners and drivers are often worried as to this condition of the teeth, and insist that the teeth are too sharp, causing the food to pass through the horse whole. As this condition is found in many horses having the best of

teeth it would seem that mastication was perhaps too hasty. We must not overlook the fact that at the time of shedding, the teeth may be irritable and derange mastication. A change of food or a slow feeding manger will often correct these defects when the floats will fail.

That many animals are relieved by the floats and soon gain flesh after this treatment without change of food seems to be true, but great care should be exercised and the extreme points only should be removed, leaving the grinding tables entire. For irregularities in driving, some round the first molars. This treatment of sharp teeth is only temporary, for, as the teeth wear the points reappear; oftener in some animals than in others. In cases where the sharpness appears to be mostly on one side, great care should be taken not to overlook some defect on the opposite side, which may bring about this one-sided wearing. Floating the teeth is often an apology for a more accurate diagnosis. Some claim this condition to be brought on by poorly developed muscles.

In the shear-mouth, most commonly one whole row is affected; both sides may be occasionally, and often only two opposing teeth; usually the fourth molars are cut at a sharp angle so that the teeth come together laterally, the wearing signs approaching the long axis of the teeth. This condition is brought about by failure of the outer side of the one and the inner side of the other to wear. If this continues, it may produce alveolar periostitis. It is found mostly in old horses and is then hard to remedy. If the animal is young and the teeth still solid, the projections may be removed with the cutter.

The wave-formed mouth is usually brought about by unequal durability of the individual teeth. This condition consists generally of a bi-lateral wearing of the molars on each side, tending toward the formation of a plane surface instead of an angular one. It usually starts from the fourth molars, as they are the shortest. The treatment can only consist in leveling the higher points.

The step-shaped mouth is started usually by the loss of a tooth, the space allowing the extended growth of the opposite organ. The molars vary in length. This condition is perhaps the most serious, and is quite often found in young animals whose teeth are found to be softer in quality than natural. The treatment consists of adjusting the individual tooth, if very far advanced the case is usually hopeless. When the teeth are worn down so that only the dentine remains they become smooth. This only occurs in old animals and the teeth are often loose in the sockets. The treatment must necessarily consist in removing all loose teeth and feeding soft foods.

True diseased conditions of the teeth are as a general rule due to the entrance of bacteria into the pulp cavity through external fissures, or by externally penetrating the alveolus. These fissures may be caused by the animal shutting down suddenly on some hard substance. If only a portion of the crown is broken, no material harm is done. More often, however, the fissure extends to the root and through this fissure, food, bacteria and the juices of the mouth may enter. These split-teeth must be removed. This is not a difficult task, especially if it has been of some standing. The inflammation naturally resulting from the entrance of these foreign substances causes sympathetic inflammation of the alveolar periosteum, which will loosen a tooth so that it may often be withdrawn simply by the hand. As a natural result of the extraction of the tooth the corresponding organ in the opposite jaw in time becomes prolonged beyond the level of the wearing edge. We have recently noted a case of an elongated tooth which had penetrated the palatine bone, forming an opening into the nasal cavity through which a finger might be passed. These prolongations take a varied and an interesting course. They should be leveled with the cutters and some authorities recommend that upon the extraction of a tooth the opposing member should be shortened by means of a claw-shaped crown cutter, having its cutting edge dropped at an angle.

The question may arise as to which is the real cause of a decayed tooth, the one already mentioned or a diseased condition

showing a disintegration of the substances of the tooth? In human dentistry this is called caries, and according to Gould is a chemical decomposition of the tooth.

Accordingly it may be applied to a similar condition of the animal tooth. Just where this process of decay starts is not exactly known. Caries never occurs in those portions of the grinding planes constantly in use. It is known that there is an invasion of micro-organisms, aided by the saliva and other juices, and that these organisms may gradually work away the whole tooth. The greater percentage of these cases must originate externally. The treatment of this condition in the horse must be the extraction of the tooth. As the remaining tooth substance is very brittle, great care is required in its removal. In the dog this condition is quite common, and we understand that it is successfully treated by cleaning and disinfecting the cavities thoroughly and filling them with some permanent substance. Caries in the dog occurs in connection with various systemic diseases; as rachitis, distemper, etc., and often affects the incisors as well as the molars. These affected teeth in the dog always become discolored. We have known of a cavity in the tooth of a horse having been cleansed and packed with gutta-percha, but the later history of this case cannot be found. This treatment has not been successful on account of the inability to remove all evidence of disease. That this will some day become successful in the horse remains a question.

When the pulp cavity of the tooth becomes diseased, inflammation of the alveolar periosteum usually follows. The close relation of the periosteum to the roots of the teeth facilitate the transmission of disease. This condition may often be caused by external injuries to the jaw or gum, or fissures may open between two teeth or along the side of a tooth, admitting some foreign substance, setting up an inflammation which soon invades the whole alveolar cavity. It is very common in the molar, but rarely noted in the incisors. From this condition we may get a variety of results. The tooth may become loosened and drop out, in the

lower jaw the bone may become involved and form a fistula, or in the upper jaw pus may be collected in the facial sinuses. When the jaw is affected there will usually be large swellings of the bony tissue. One form of this disease is characterized by the formation of bony deposits on the root of the teeth, which hinder in their extraction. The treatment in these cases consists only in the extraction or repulsion of the affected member.

Perhaps the safest method of removing these teeth is that of removing a portion of the alveolar plate extending over the tooth. This is done by trephining over the fangs, care being taken of the surrounding tissues, and the soft parts loosened from the bone by passing a scalpel down into the mouth from the edge of the trephined opening. Then with the saw cut through the plate at each edge of the tooth; then apply a large punch to the fang and drive the tooth outward into the mouth. The animal should be placed on the table and anæsthetized. Alveolar periostitis is sometimes found in carnivora. It may attack a number of teeth and acts in connection with deposits of tartar. This tartar works down beside the gum and loosens the teeth. If the tartar be removed at an early period, periostitis may be prevented. When the disease is past prevention, the teeth must be removed, and the alveolæ treated antiseptically.

Dental cysts are quite common in solipeds and may occur in nearly any part of the body. These require more or less skill in removal, according to their locality. Dental tumors are uncommon in animals, unless the exostosis formed in alveolar periostitis may be considered as such. However, these are not true dental tumors.

In the general treatment of dental disorders we must not forget that the greatest comfort we can give our cases and the more humanely we treat them, the more successful will be the result; for the extreme painfulness of these conditions must readily be recognized. The question of diet should be equal perhaps to that of disinfection; soft tempting foods being the rule. Supply grass in place of hay, vegetables, mashes and scalded grain replacing harder food when possible.



There seems to be a growing tendency of late to isolate this branch of our profession. We notice this particularly in the up-start of so-called dental schools, which issue diplomas to their students without any extensive preparation. These men may be found performing in our midst some interesting and disgusting feats. A case or two will suffice to illustrate this. A five-year-old horse, which had been floated by a graduate of one of these schools, had been doing well until its mouth was interfered with. After being floated he could not or would not eat for nearly two weeks. The teeth were found to have a wearing edge of less than one-half inch, nearly one-half the table being filed away. The owner had been persuaded against his will to have his stable examined. All his horses were young and in good condition, but nevertheless all were treated alike. Within a week another interesting case has come under our observation. An animal had been unable to eat properly for nearly a month. A man was sent to examine the animal and found his teeth needed floating, and he floated them. Later, upon examination, a strong piece of a limb was found wedged across the roof of the mouth between the upper fourth molars, causing them to be pushed somewhat out of their normal line.

That this condition of affairs should continue in New York State does not seem right; when our laws say that legally we must qualify for and pass the State Board examination.

The value of our domestic animals, it would seem, does not as yet warrant the specialization of any branch of our profession to the exclusion of all others. On the other hand, we should improve our knowledge of every branch of our work, apply it more conscientiously in our daily practice, and by our attitude toward our profession, strive to create a truer realization of its importance in the popular mind.

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A CORRECTION.—In the historical sketch of the Massachusetts V. M. A. published in the June issue of the REVIEW, line 2, page 345, should read, "and did know" instead of "and did not know."

## VETERINARY EDUCATION AND THE PUBLIC.\*

BY D. ARTHUR HUGHES, PH. D., D. V. M.

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I. THE VALUE OF VETERINARY KNOWLEDGE TO THE PUBLIC.—On an occasion like this, when over a hundred men have conferred upon them the degree of Doctor of Comparative Medicine before a mixed assembly of citizens, we may profitably ask ourselves: What is the value of veterinary education to the public? We answer that veterinary education is of inestimable service: first, to the public health; second, in the prevention of extensive losses of property; and third, in the furtherance of agricultural and commercial prosperity.

(a) VETERINARY EDUCATION AND ITS SERVICE TO THE PUBLIC HEALTH.—During the last few weeks the word has been passed around in the newspapers that President Taft proposes to establish a United States Department of Health, with an Executive Secretary of Health, just as now there are Secretaries of War or the Navy. Under these circumstances the present Departments of the Treasury and of Agriculture would be the most affected, in that the Marine Hospital and Public Health Service of the Treasury Department and portions of the work of the Bureau of Chemistry of the Department of Agriculture would suffer cleavage, and would be included under the newly organized Department of Public Health. Such a plan, that of the institution of a departmental public health service, has long been agitated by the American Medical Association. If it comes, even as late as in the present administration, it will be a consummation devoutly to be wished.

Long before the American Medical Association took up in earnest the plea for a federal Department of Public Health, the American Veterinary Medical Association saw the necessity for earnestly endeavoring to bring about the establishment of a ser-

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\*The "Doctorate Address" given at the Twenty-sixth Annual Commencement, Chicago Veterinary College, April 6, 1909.

vice whereby American Veterinary Medicine could do something to conserve the public health. The American Veterinary Medical Association, as an association, antedated the American Medical Association in its agitation for the federal control of public health matters, at least in so far as they concerned Veterinary Medicine. As early as 1889-1890 the United States Veterinary Medical Association, after warm debate, urged the establishment of a national meat inspection service as a public health measure.

The fundamental law, inaugurating such a system of federal meat inspection, became operative in 1891. Between 1891 and 1906 the federal officers charged with the administration of the original law, and its amendments, suffered many embarrassments, owing to the fact that the congressional appropriations for the inspection were dwindling and often in jeopardy, and because of the limitations of the law, which provided only for the ante mortem and post inspection of the animals or carcasses at the large abattoirs in great live stock centres. But in 1906 the new law, now in operation, made provision for greater protection, sanitarily, for the people, by extending the federal inspection to all food animals or meat food products going into interstate or foreign trade; besides providing for sanitary conditions in handling meat foods, and other features advantageous to the public health. Men educated at veterinary colleges have always done this work, or have had supervision of it, and this will be continued. Veterinary education is, therefore, of important service to the public health.

Equally true it is that:

(b) VETERINARY EDUCATION RENDERS PUBLIC SERVICE IN THE PREVENTION OF EXTENSIVE LOSSES OF PROPERTY.

During the past winter the country has been visited by European Foot and Mouth Disease, a scourge which, in 1902, made a similar visitation. In 1902 it was confined to certain sections of New England. This time it spread in Southeast Michigan, Western New York, Eastern Pennsylvania and a small section of

Northern Maryland. The balance sheet has not been made up for determination of the total cost of the contagion to the country; but it will probably reach not far from a million dollars. Just as it is the duty of the medical profession to control or prevent Asiatic cholera, bubonic plague, or yellow fever, should outbreaks occur, so also it is the duty of the veterinary medical profession to prevent or control animal plagues which mayhap visit our shores. Foot and mouth disease is an illustration. However, we have the advantage that we can destroy all animals affected or exposed; we can not only quarantine and disinfect, we can get rid of all infected or suspected animals. In the case of European Foot and Mouth Disease this means probably large quantities of cattle, sheep, swine, together with, perhaps, birds which carry the infection. Thus we can entirely stamp out a dreaded infection in short order, instead of employing the slow, shilly-shallying methods necessary in human medicine. The expense may be larger; but the plague immediately loses its sway, and is shortly no more to be found in the land. There is no necessity for explaining the obvious. Unquestionably this is the work of veterinarians; those, of course, who are adepts in veterinary sanitary science. Hence Veterinary Education is of important service to the public in the prevention of extensive losses of property.

(c) THE SERVICE OF VETERINARY MEDICINE TO THE PUBLIC IN THE FURTHERANCE OF AGRICULTURAL AND COMMERCIAL PROSPERITY.—But veterinary education is of far greater service to the country than in the prevention of property losses. For the knowledge which it seeks, and the research which it fosters, touch the very financial foundation upon which we rely for the support of the government. Last year there gathered in Washington, at the request of President Roosevelt, the governors of a majority of the States, together with prominent educators from leading universities. The conference was called for the purpose of considering the problems of the conservation of our national resources. We heard much then of the necessity for opening

up great inland waterways; of the conserving of the national forests; of the preservation of the national domain; of the prevention of vandalism of the national mineral resources. But a very large, if not the largest, share of the wealth of the nation is its wealth in domesticated animals, and upon this animal wealth depends, in very large measure, agricultural and commercial prosperity and national progress. What is the country doing to conserve the national agricultural resources by public benefaction for the support of purely veterinary professional schools? Nothing! Yet veterinary education has, as one of its chief reasons for existence, the necessity that men should be trained to control animal scourges, which, if allowed to go on unresisted, would paralyze our national agriculture. Is not then veterinary education a means for the conservation of our national resources? Certainly veterinary education has serviceability to agricultural and commercial prosperity.

II. SERVICE TO THE PUBLIC AS THE MAIN PURPOSE OF VETERINARY EDUCATION.—Gentlemen of the graduating class, I would not read you a homily to-night. Yet I would remind you that service to the public is the main purpose of modern veterinary education. Service, practical usefulness, is the keynote of medical training.

How, then, may the veterinary medical graduate be of best service to the public? High school boys, after finishing their preparatory education, usually come up to college or university with an inflated notion of their own importance, and a priggish opinion of the vastness of their knowledge. Similarly, the medical graduate is apt to finish his course with the opinion that he has now learned the science and must immediately practice it. Graduates of the college, you may think you have learned very much—you have learned very little. You have only gotten a foundation upon which to rear a superstructure of scientific knowledge. If you do not daily and hourly increase your knowledge of medicine you will become stagnant, fossilized, useless. The people will have no advantage from your work. Nor will

your service be worth a picayune to your community. Stagnancy is perilous to the medical graduate.

It is strange how fond the human mind is of vagaries and how it enjoys making fetishes of them? We veterinarians have one pet delusion which we are forever repeating and in which we bury the truth. What worse confusion could there be in our minds than when we speak of veterinarians in the public service and those in private practice. There is a sense in which we are all in the public service. The success of the private practitioner consists in his usefulness to the public. The full, complete success of veterinarians employed by municipality or State consists in their practical usefulness to the public.

What, then, do we mean by practical usefulness? Not, surely, reliance in a modicum of knowledge acquired by a few weeks' residence in college; but continued acquisition of new knowledge, by reading, observation and experiment, to the end that there may be fitness to solve veterinary problems for the public benefit. The fossilized veterinarian becomes less and less useful; less and less practical. He places his confidence in chimeras. He clings to obsolete notions of bygone days. They are as fantastical as they are antique. They are learned lumber in the garret of a mind which is closed to modern researches. Would you increase your practical usefulness, then let your intellectual horizon expand. **Be progressive!**

"A little knowledge is a dangerous thing;  
Drink deep, or take not of that Pierian spring."

The meaning of practical usefulness, as applied to graduates, is found in the **intelligent application** of the principles of veterinary medicine in the **service of the public health**; the prevention of losses of property in animals; and the furtherance of agricultural and commercial prosperity, especially in domesticated animals.

But progressiveness of the mind, and consequent increase in practical usefulness to the public, is not all that is required of you. The popular conception of a professional person is not only

a man who knows his science and knows how to apply it for the public benefit; but who so carries himself, or conducts himself as becomes a member of a professional class. There is no snob-bishness in setting forth the idea that the conception of a professional man, in the public mind, is that of a man with moral fibre; with force of character; with high ideals of conduct. The public would be served not by learned men without character, but by learned men with character. You will all struggle to be successful in professional life. Failures come from two sources: progressiveness or stagnancy of the mind, stultification of character. Both are equally needed for true, full success—intellect and character. Ladies and gentlemen, I would not bedeck this address with excess of ornament. Nor, as Marcus Tullius Cicero said in one of his orations against Cataline before the Roman Senate, would I “waste the night in words.” Let me, however, exhort the graduates to remember, as they leave college for active public service, the words of Thackeray, the great satirist of social misconduct and human folly, when in a happy mood he wrote:

“Who misses or who wins the prize,  
Go, lose or conquer as you can;  
But if you fail, or if you rise,  
Be each, pray God, a gentleman.”

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CURIOSITY AROUSED.—“Papa, what makes the cheese smell so?”

“The process by which it was cured, I presume.”

After some moments of profound cogitation. “Papa, what would it smell like if it hadn’t been cured?”

THE DIFFERENCE.—At one time both Montague Matthews and Matthew Montague were members of the British House of Commons. Mr. Matthews was a big, powerful, giant of a man. Mr. Montague was thin and emaciated. The speaker frequently confused the two.

“I can’t understand it,” said Montague Matthews. “There’s as much difference between us as there is between a horse chestnut and a chestnut horse.”—(*Everybody’s Magazine*.)

## PROTECTIVE VACCINATION OF CATTLE AGAINST TUBERCULOSIS.\*

BY PROFESSOR J. F. HEYMANS.

The inoculation procedure of v. Behring, Koch and Schütz, v. Baumgarten, Lignières, Friedmann, Calmette, Vallée, Arloing, etc., are well known. I may, therefore, pass at once to a description of my method, not wishing to rouse criticism nor to discuss the question of superiority, for in time meditation and experience will reveal the truth.

Whoever talks of vaccination against tuberculosis must also admit the possibility of an acquired immunity, of ultimate cure in spontaneous tuberculosis, that tuberculosis in man and beast is curable, i. e., is not always fatal, no one disputes; that a "super-infection" does not, by far, evoke a tubercle formation, like that developed spontaneously, may be daily demonstrated experimentally. If a healthy animal be put into an infected stall, become infected, and remain there, exposed to the same contagium for years, I and other investigators have often observed on autopsy, only the encapsulated and calcified tubercle lesions of the primary infection, or no lesions at all. In the healthy bovine or human, it suffices for the development of tubercles, that a few bacilli be ingested or inspired; on the other hand a subject with pulmonic lesions may eject day after day enormous quantities of bacilli without developing new tubercles in the healthy portions of the lungs or in the larynx, or in the intestinal tract. These, and many other facts, unquestionably prove that an organism affected with the disease is indubitably more resistant against a new infection or tubercle formation. That, therefore, we find augmented immunity against a new bacillary infection; and that this reaction of the organism may, and does, lead to a perfect encapsulation and cure of the infection present.

\* Ueber Tuberkuloseschutzimpfung beim Rinde. (Wien. Klin. Woch., 1908, No. 25.)



The problem of vaccination against tuberculosis (in the case of variola, already solved) must, therefore, attain solution by the use of a vaccinator tubercle having all the advantages and none of the disadvantages, of a spontaneously developed tuberculosis, and dependent upon such reciprocal action of the organism vaccinated and the vaccine tubercle, that no progressive tuberculous infection develop.

To induce these reciprocating conditions, we have pursued the following technic: We place about 1 mg. of living bacilli to which some powder is added (what quality and quantity of bacilli give the best results, has not yet been ascertained) in a reed sac which is closed, and for safety's sake coated over with collo-dion, and this sac, filled with bacilli is inserted under the skin of the animal.

That the subcutaneously located sac acts vaccinally is proved by the following data:

If a sac containing 0.5 ccm. of crude tuberculin is allowed to diffuse for twenty-four hours in 5.0 ccm. of physiologic salt solution, and 5.0 ccm. of this be injected into a tuberculous animal, the latter develops a typical reaction. Tuberculin, therefore, diffuses through the intact membrane of the sac.

Into a sac containing 0.5 ccm. of glycerin bouillon, tubercle bacilli were inoculated, and the sac was then placed in a flask holding 50 ccm. of glycerin bouillon; the bacilli gradually develop in the incubator into a compact cylindric mass completely filling the lumen of the sac.

It is now demonstrable that the bouillon in which the sac is suspended possesses the same specific properties as bouillon, upon whose surface a thick film of tubercle bacilli freely forms, i. e., it contains tuberculin, and the bacilli multiply as though all of the bouillon in the flask were at their disposal for nourishment and secretion.

Placed under the skin of the animal, the sac acts precisely as in vitro and in the incubator. A tuberculous animal gives the typical reaction if a sac holding 0.5 ccm. of crude tuberculin be

placed under the skin. On the other hand, if a sac containing bacilli be subcutaneously placed, the bacilli (as shown by microscopic section of the sac) flourish as long as they receive by diffusion the necessary nutriment. As demonstrated in guinea pigs, the bacilli remain alive and draw from the organism of the inoculated animal, their specific foodstuffs as long as the diffused substances are not completely bactericidal; i. e., as long as the organism remains insufficiently immune.

Around the subcutaneously placed sac there forms in the first forty-eight hours an exudate consisting almost entirely of polynuclear cells, and within four to eight days a tough connective tissue capsule develops. In its centre is found the intact sac, which contains bacilli but no cells; whilst external to the sac, no bacilli are microscopically demonstrable. The small inoculation nodule is perfectly similar, then, to a tubercle, except that the bacilli are completely isolated. After six to eight months, the inoculation node calcifies and atrophies in toto; the bacilli disintegrate, degenerate, and perish; so that the whole contents of an inoculation-nodule (after twelve to eighteen months) injected into a guinea pig, produces no tuberculosis.

That an hermetically sealed sac acts as a diffusion-membrane for the specific bacillary products, that it prevents the escape of the contained bacilli, and that the sac itself remains uninjured, is easily demonstrated.

In cattle slaughtered one to four weeks after inoculation, the sac may be extracted from the nodule absolutely intact, and an emulsion of the flesh which surrounded it will not infect guinea pigs. The later fate of the sac, as dialyzer, depends, in general, upon the quality and quantity of the bacilli, and, in particular, upon the digestive and immunizing properties of the inoculated organism. Concerning the details of these processes I am not yet sufficiently informed.

Even as the bacillus-laden sac, suspended in a flask enriches the surrounding bouillon with specific bacillary products, so the contained bacilli impregnate the body of the inoculated animal

with the same specific material. A non-tuberculous animal gives in three or four weeks after inoculation a characteristic tuberculin reaction (as similarly observed by Moussu with clay filters), just like a tuberculous animal, and for the reason that the general action of the inoculation-tubercle is the same as that of an infection-tubercle.

This hypersensitiveness to tuberculin gradually disappears within six to eight months after inoculation; so that healthy vaccinated cattle, which eight to twelve months later do not react to tuberculin, may be considered as free from tuberculosis.

What occurs in the appearance, persistence and disappearance of hypersensitiveness to tuberculin, i. e., what takes place in the organism of the inoculated animal during the process of immunization is a question whose answer demands a knowledge of the mechanism of vaccination, a question which will interest us only after we are agreed as to the existence of an anti-tuberculous vaccination.

Is, then, a sac-inoculated animal vaccinated against an experimental or a spontaneous infection? If, as above, we accept a determinate immunity and cure, in spontaneous tuberculosis as proved, we need hardly add here, that as regards duration and intensity, it is relative only. That cattle inoculated by the sac method are less quickly and less intensely infected, subcutaneously or per os, than control-animals, was determined in three serial experiments upon a total of thirty-six animals; the chief result being that the control-animals became infected whilst the vaccinated escaped infection. The latter were slower in reacting to tuberculin, and when slaughtered showed less extensive lesions.

That this heightened resistance of vaccinated animals to experimental infection suffices to protect them materially against natural infection, is shown by various experimental series carried on in practice. Ten non-reacting cattle, five of which we vaccinated, were put into an infected stable.

When slaughtered five months later, one of the five vaccinated was tuberculous, the other four not; whilst of the five not vaccinated, four were tuberculous and one not. Of eighteen other sound cattle, nine of which were vaccinated, six of the control-animals were tuberculous and three healthy; of the nine vaccinated, two were tuberculous, one was doubtful, and six were healthy (post-mortem).

Of over 4,000 vaccinated healthy cattle (1905-06-07), re-tuberculinization showed that the majority of them (about 80%) did not react, i. e., they remained free from tuberculosis if we can depend upon the tuberculin reaction in vaccinated animals. Careful autopsy of these animals alone can decide. Among the hitherto autopsied animals (about 500) there were about 150 sound vaccinated, which had not reacted to retuberculinization; tuberculous lesions were found in six. If, therefore, the injection of tuberculin be practical, about a year after vaccination its diagnostic value is as great in the vaccinated as in the unvaccinated.

From the results of these numerous experiments and observations, I feel justified in concluding that animals vaccinated by the sac method are rendered considerably more resistant to both the artificial and the spontaneous infection.

In practice, in all stables, not only the non-reacting animals, but also the already reacting, were vaccinated; and, since in the latter as well as in the former, the bacilli enclosed in the sac diffused slowly but continuously, tuberculin material throughout the tuberculous organism without exciting the least general reaction. The sac method offers the most ideal means of injecting tuberculin as a curative agent in tuberculosis. In combating bovine tuberculosis, the eventual cure or relief of tuberculous animals is a side issue, but it diminishes infectiousness among cattle. This much I am now able to declare, namely that vaccinated tuberculous animals cease in greater number to react to tuberculin than the unvaccinated, and that on autopsy they show marked retrogressive lesions.

As noted in the previously published results, one can by vaccination alone retard infection of healthy cattle living in infected stables, in a rational, practical struggle against the plague. All prophylactic measures, such as isolation, slaughtering of animals openly tuberculous, sterilization of milk, etc., should be practiced as much as possible as adjuvant.

To continue the duration of immunity, vaccination, in a number of stables, should be done half-yearly; in the majority, however, but once a year, each time first vaccinating any new additions. Experiments in biennial vaccination also are not excluded, or the interim may be even longer; but it seems certain that a yearly vaccination of the bovine population more than suffices.

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NEW YORK CITY'S WORK HORSE PARADE.—The third annual work horse parade under the auspices of the Women's Auxiliary of the American Society for the Prevention of Cruelty to Animals was held on Memorial Day, May 31, 1909. The officers of this association, Mrs. James Speyer, president; Mrs. Edward R. Wharton, first vice-president; Mrs. Gordon Knox Bell, second vice-president; Miss Marie Winthrop, treasurer, and Mrs. Robert G. Mead, secretary, together with the Executive Committee (which includes many women of note in New York society), and other committees and their friends, occupied the booth on the reviewing stand at the Worth Monument, from which they awarded the prizes and ribbons. Over two thousand horses were in line, including representatives from practically all of the city departments where horses are used, as well as those owned by private individuals and firms. The Police Department horses while on parade kept the avenue open and attracted much attention and called forth enthusiastic admiration. Redmond P. Keresey on "Pompey," the twenty-seven-year-old police horse, came in for his usual large share of it. Both man and horse are retired, the former, who had ridden "Pompey" when "in the service," having purchased him on retirement. From the appearance of the work horses in line this year, it is evident that the object of this society of noble women, which is the betterment of the work horses' condition, is being fully realized.

## THE NECESSITY OF PROPER VENTILATION.

BY F. D. HOLFORD, D. V. M., SIDNEY, N. Y.

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It is a foregone conclusion that if the dairymen could once be aroused in regard to the importance of fresh air and light in their stables, in a comparatively short time there would be no more dark, poorly ventilated stables and consequently a larger percentage of healthy cows producing a purer quality of milk thereby repaying the dairymen many times for the small outlay of time and expense required to install a proper system of ventilation. My work as Veterinary and Sanitary Inspector brings the importance of this matter under my observation as I visit several dairies daily, and would necessarily be blind indeed not to notice the great difference in the stables that are ventilated and those that are not. I believe that it is up to us veterinarians to educate the dairymen with whom we come in contact in regard to this important matter.

The fact that there are so many poorly ventilated stables is due more to a lack of consideration than to ignorance among the dairymen, as they well know that air which has passed through the lungs is unfit to be again inhaled. In many instances it is rather difficult to get the dairymen interested and to make them see the necessity of a proper system of ventilation which provides an outlet for the foul air and gases to escape as well as an inlet for the pure air to get in. They often contend that their hay chutes answer this purpose. They do not realize that the foul damp air escaping into the upper part of their barns is coming in contact with the fodder and in cold weather is condensing and falling on different parts of the stable and on the cows themselves, which makes them very sensitive to the cold, and when they are turned out to drink they become so chilled that in many cases it causes a shrinkage in their milk.

We are aware that the milch cow is one of the most susceptible animals to foreign influences in her surroundings. Therefore it looks reasonable that in order to gain the greatest benefit from the dairy cow, she should not be subjected to radical changes. I have had dairymen tell me that they had noticed, that after the stable doors had been opened while the cows were out to drink, that in a short time after the cows had returned and the doors closed, the stable was much warmer than it was before the cows went out, which is a good illustration of one of the great benefits to be derived from a change of air in the stable.

How often we see a dairyman keeping his cows in the darkest and the most unsanitary part of his barn, while for his fowls he has provided a home which is well lighted and ventilated, for he is aware that his fowls will not do well unless they receive such treatment. It is a mystery to me why he has not discovered this in regard to his dairy cows, for to do well, they surely need the light and ventilation as much, if not more so, than his fowls.

It is true that to-day there is a large number of tuberculous cows in the country and I believe that the dairymen are largely responsible for this state of affairs; for they have, in most instances, compelled their cows to inhale the same air over and over again; and if they had one cow infected in their dairy, some of the others were sure to become so sooner or later. While pure air is so necessary to life and health and while there is such an abundance of it, and as it does not cost anything, it seems strange that anyone should deprive their animals of a sufficient quantity.

The main treatment for tuberculosis in man to-day is an abundant supply of fresh air and the medical profession not only claim that it is a cure for tuberculosis in its first stages, but that it will to a certain extent prevent the disease. Now, if this is true of the disease in man, why will the same not apply to animals? We know it to be a fact that in conducting a post-mortem examination on tuberculous animals, we find lesions which have

apparently healed and also some which appear to be under the process of healing. I firmly believe that animals slightly infected with this disease could, under proper conditions, become permanently cured.

According to the old saw that "an ounce of preventive is worth a pound of cure," the dairy cow should be kept in such a vigorous state of health that she will be able to throw off any disease germs which might get into her system. One of the most important factors to bring about this physical condition is a proper system of ventilation in the stable; as we should always bear in mind, that the pure air is of as great importance as pure food. In regard to a regular mode of ventilation, we can lay down no hard and fast rules as to the location of the ventilators; as no two stables are constructed on the same plan. In putting in the outlet shafts, they should, preferably, start from behind the cows and from one-third to one-half the distance from the ceiling to the floor, and if possible, should extend upward to a little above the highest point on the roof. If it should extend out through the side of the roof and lower than the ridge-board, there would be danger of getting a downward current of air in the outlet shaft, at times when the wind would be in certain directions. The outlets should be made of wood; as metal ones, in cold weather, cause the moist air to condense and consequently a downward drip. They should also be made of matched lumber, closely bound together by cleats on the outside, leaving the inside surface smooth; so that dust and foreign matter will not have a chance to adhere to it. The principle of putting the shaft on the stable should be the same that we would apply in putting a chimney on a house. In fact it is a chimney on the cow stable; and if we wished to place a stove underneath and insert the stove pipe into the shaft, the stove would draw (so to speak) just as it would in a house. The shaft should not have an elbow at right angles in it, as it has been proven that they do not work so well.



Some dairymen do not like to put the outlet shafts through the roof of their barns, but prefer to run them up into the cupolas. These as a rule work fairly well, providing there are windows or openings in the cupolas. Some prefer to have their outlets start near the floor (King's system) of the stable, but I have found that those starting nearer the ceiling give better satisfaction. In putting in the outlet shafts one must use his own judgment as to the proper size and number as these depend upon the location and tightness of the stable, the number of cubic feet of air space per animal and the number of animals to be kept in the stable. The outlet shaft should not be less than ten inches in diameter. A safe rule to follow in a tight stable where from ten to twenty cows are confined is to allow one inch in diameter of shaft to each cow. For a number of cows between twenty and forty, two outlet shafts of fourteen or fifteen inches are advisable. In large stables two or more outlets give a better circulation of air than one.

The intake pipes should be at least six inches in diameter, and if possible, should be placed in front of the cows, with the inner opening extending toward and within ten inches of the ceiling; so as to prevent any draft upon the cows. The intakes, when possible, should be placed on the opposite side of the stable from the outlet shafts, so as to give a more thorough circulation of air. Two elbows and a length of stove pipe make a satisfactory intake, the two elbows being put together, the openings in opposite directions, one elbow and the length of pipe attached, with the opening pointing downward on the outside of the stable and the other elbow (containing a damper) with the opening pointing upward on the inside of the stable. The pipe and elbows may be made of galvanized iron which is an excellent material for the purpose, or the intake pipes may be made of wood, similar to the metal ones; or, there need be but one elbow, and the six-inch shaft being from three to four feet long on the inside of the stable, opening near the ceiling.

The number of intake pipes depends upon the size of the stable and the number of cows kept therein. An average stable which will accommodate about twenty cows, should have about four intake pipes, and one which will accommodate from thirty to forty cows, should have at least six intake pipes.

The air coming into the stable from the outside through the intake pipes being heavier than the foul moist air of the stable, has a tendency to drop downward, thus displacing the air of the stable, forcing it to escape through the outlet shafts where it finds the least resistance. This causes a constant circulation and change of air in the stable, thereby removing the foul air and gases and making the stable warmer, dryer and certainly more healthy for the animals. The temperature of the stable can be governed by the dampers in the intake pipes.

After the ventilators have been installed, the hay chutes and other openings should be kept closed so as to enable the ventilators to work properly. Some advocate the use of muslin in the windows of the stable. Although this may be better than no ventilation at all, it cannot be compared with the outlet shafts and intake pipes, as it does not cause a proper circulation of air, soon becomes soiled and then tends to exclude the light.

One dairyman informed me that since he had installed a system of ventilation in his stable, that his household had ceased to complain of the strong stable odor in the clothing worn by the men from the stable. I have visited many stables which were properly ventilated, and I have yet to find a dairyman who condemns it; but on the contrary, they are invariably highly pleased and wonder how they ever operated their dairies without ventilation and would not dispense with it under any consideration.

Let us stand by the good old cow,  
And try to treat her fair,  
By giving her the best of hay from the mow  
And plenty of good fresh air.

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ON to Chicago in September.

## RESECTION OF THE FLEXOR PEDIS TENDON FOR THE RELIEF OF NAIL WOUNDS PENETRATING THE NAVICULAR BURSAE.\*

BY C. H. CASE, D. V. M., AKRON, O.

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The cause of the condition indicating this operation is usually the penetration of a nail or a spike in the depression at the union of the sole and frog, or side of the frog about midway between the point of the frog and the heel.

A nail entering at this point, where a great many nails seem to enter, and passing upward about one and a half inches usually enters the navicular bursa.

This usually occurs in the heavy draft horse of a sluggish nature and slow gait that will stand considerable pain without evincing much lameness and rarely in the light driver that travel at a rapid gait and are very sensitive to pain.

The posterior foot is the one most always affected, only one out of nine cases presented to us for operation was for the anterior foot. The reason for this is that when the nail is picked up by the anterior foot, the horse will nod and attract the attention of the driver who will stop and remove the nail before it is driven into the bursa. When the nail enters the posterior foot, of course the horse flinches but does not show the nodding of the head so marked. The driver usually thinks the horse interfered or just a sprain and keeps on driving without examining the foot. After the nail has entered it is quickly driven deeper by the horse pulling and carrying considerable more weight on his posterior limbs. When once the head of the nail is on a level with the bearing surface, the horse will not show much lameness on the pavement, but when driven on a rough or dirt road the lameness increases. The usual history is that the

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\*Presented to the 26th Annual Meeting of the Ohio State Veterinary Medical Association.

nail is not found until the horse is taken to the barn where he is examined on account of being a little lame and the nail discovered driven into the tendon and bursæ.

If you happen to be called to remove the nail at this time, as is rarely the case, upon withdrawing the nail, considerable hemorrhage will take place, but we never have been able to detect serum, though perhaps it may have been mingled with the blood.

In most cases when you dress the wound within the next twenty-four hours, you will find the horse quite lame, walking on toe and from external appearances, the wound seems to be doing fine with no sign of serum.

This condition may exist from three to ten days, and even longer, the horse continually becoming lamer until you will find on a subsequent dressing a large quantity of serum and pus, and you are certain the nail entered the navicular bursæ.

We attribute this condition to the elasticity of the tendon. The nail having passed through the tendon and when pulled out the tendon retracted and no serum escaped, the inflammatory action that follows serves to keep the wound closed. The serum is infected and depending upon the degree of infection you have the final breaking out of the serum and pus, through the weakest part, the nail wound, sometimes the pus follows up the tendon, and breaks out in the hollow of the heel. One case that we held a post-mortem upon, the pus had followed up the tendon and infected the synovial bursæ of the fetlock joint.

The external symptoms that are presented by the horse depend upon the rapidity of the formation of pus in the synovial bursæ, and are very characteristic.

For the first two or three days you will not be able to detect any difference from other nail wounds, except the horse is quite lame, walking on toe and does not want to be moved. As the pus increases in amount, the appetite decreases and the foot is lifted from the ground and often held up, or only allowing the toe to rest. There is some swelling of limb, tenderness on pressure over the tendon in the hollow of the heel, and pulsation of

the metatarsal or metacarpal arteries. When the pus and serum finally breaks through the wound, or through the tendon in the hollow of the heel, the symptoms are characteristic. The horse is uneasy, paws if of a nervous disposition, often breaks out in a profuse sweat which may last for several hours, refuses all feed and water, is up and down, pulse increased to sixty and even eighty; temperature, 101-103, and respiration rapid. This condition lasts from a few hours to twenty-four or more, the symptoms all the time abating. The quicker you can operate at this stage, the better is our rule. If the operation is not performed at this time, and the wound treated in the usual way, the granulation of the tissues around the wound partly stops the flow of pus and the result is that the frog and sole become under-run.

Some cases in strong, rugged horses, by soaking the foot in hot antiseptic baths keeping the wound open, will in the course of six to twelve months make a recovery, but are usually left with a hitch which we attribute to the exostosis which forms on the navicular bursæ at the point of injury, together with the thickened tendon to which it has become adhered, causing a shortening of the tendon, and high heel and lameness. When the tendon is resected we do not have this condition to contend with. In some cases, the pus follows up the tendon and breaks out in the hollow of the heel and may affect the bursæ of the fetlock joint.

Another termination is that the nail may have penetrated deeply into the navicular bone and the pus in destroying the bone makes an opening into the joint formed by the navicular bone and the second and third pedal bones. From any of these we may have absorption of the pus and septicemia; with it symptoms of uneasiness, precarious appetite, pulse 70-100 and temperature 102-106, followed by death in a few days.

We recently had such a case presented to us six days after the uneasiness set in, down all night, scarcely able to rise, pulse 90, temperature 106. Was operated upon as a last resort, but

the absorption of pus had been of too long duration and the horse died seven hours afterwards.

The operation is the same given in Dr. Williams' book on surgical operation.

When we discover serum exuding from the nail wound we pare out all the discolored frog and sole and bandage the foot in a warm bichloride pack, usually allowing it to remain in from six to twelve hours or until we can arrange for the operation.

If the patient will eat, it is given a bran mash and water, all hay and straw being kept away, this is done to prepare the horse for the operation and for the use of chloroform if required.

As we have no operating table, and the horse is gone too lame to walk to the hospital, we usually operate at the owner's barn, if a place can be found large enough to cast the animal.

For an anesthetic we give per rectum depending upon the size of the horse, 2 or 3 oz. of chloral hydrate dissolved in three pints to two quarts of water, with one ounce of gummi-arabica. In twenty to thirty minutes the horse will become quite drowsy and sometimes will fall down, but in most cases, where we have plenty of help, we put on the English hobbles in about twenty minutes, and cast the patient with the affected foot on the under side. Four grains of cocaine are then injected over the plantar nerves. The foot affected is removed from the hobbles, and strapped to an extension board six feet long and eight inches wide, extending under the horse and beyond the foot about ten inches. This is made fast with ropes and a six to eight-inch box put under the end of the board to elevate the foot for more convenient operating. A heavy tourniquet is applied midway between the fetlock and hock, the antiseptic pack removed, and everything is ready. With the hoof knife, the sole, bars and frog are pared thin, especially near the frog, all discolored spots being cut away. The foot is thoroughly cleaned with 1-1000 bichloride solution, hands made clean, and with instruments previously boiled, a transverse incision with a scalpel is made across the frog, about one and a half inches from the heel, cutting at a right angle to the tendon, this passes through

the remaining horny, sensitive and fatty frogs, about an inch in depth. With the sage knives and steady tension, with a tenaculum beginning at the incision and cutting towards the point of the frog, this part is removed.

Your nail wound is then plainly visible, and can be probed to ascertain the direction the nail took and also the location of the navicular bursæ. With the finger drawn with steady pressure over the tendon, the navicular bursæ can be felt. Make another transverse incision, across the tendon, directly over the navicular bone, and proceed as before with the sage knives, being very careful when cutting anterior to the navicular bone, not to penetrate the capsular ligament of the navicular pedal joint. This is easily avoided by placing considerable tension on the severed end of the tendon pulling it away from the ligament.

The surface of the navicular bone is curetted and roughened, the bursæ cleansed with bichloride solution, 1-1000, and dusted with iodoform and the wound packed with a gauze previously boiled and dusted with iodoform.

Absorbent cotton saturated with bichloride solution is used to pack the wound and sole beyond the extension of the wall, being held in place with a bandage. Over this dressing, oakum saturated in bichloride solution is placed covering the entire foot up to the fetlock joint, making it about two inches in depth, over this four or five tar bandages are placed which serve to retain the moisture and keep out contamination. A burlap is tied over all, hobbles removed and the horse is allowed to rise when it wishes. Such a dressing, if you are careful to keep everything strictly clean, can be left in place from seven to fourteen days, with very little, if any, formation of pus. If you can leave the bandage in place ten or more days, upon removal, you will find the wound entirely granulated over and showing a very healthy condition. After the operation, usually in twenty-four hours, the horse will put its foot on the ground, restlessness ceases, appetite returns, and in a few days begins to put some weight on the foot.

If pus forms under the bandage in a considerable quantity, the horse will begin to show uneasiness, again, by lifting the foot from the floor, resting no weight upon it, together with a rise in temperature and pulse. By removing the bandage, soaking the foot in hot bichloride, and redressing as you would any nail wound, the symptom will abate and return to normal.

Within six weeks, the horse will be walking with a slight limp, and should have daily exercise in a paddock, or turned out in a pasture wearing a dressing shoe. In two months, they are ready for work, and after starting at a light work, by gradually increasing the size of the load, they are soon able to do their accustomed work.

One horse that was operated on thus, four months afterward pulled 4,800 pounds up a very steep incline, away from one of the shops and to the depot a mile away without showing any effect therefrom. This same horse has been in constant service two and a half years, and is in as good condition as any horse in the barn.

Care should be exercised to draw light loads until the tendon becomes securely attached, and to shoe with a high heel calk for the first two times.

We have operated upon nine cases with seven recoveries and two deaths, one death due because septicemia was far advanced before we were called to see the patient and operated as a last resort. The other because we could not convince the owner to let us operate until he saw the patient was going to die, and wanted the operation performed. Three other cases that we have observed, where no operation was performed resulted in two deaths and one recovery, which has been lame for over one year, and consequently of little value.

We have come to the conclusion that unless an operation is performed, when serum is discovered coming from the wound, that the horse in the majority of cases dies of septicemia and in the few cases where recovery takes place, the horse remains lame ever afterwards, thus we feel justified in advising the operation at once from a humane as well as business standpoint.



## MELANOSIS.\*

BY PROF. SIMON J. J. HARGER, V. M. D.

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Melanosis, or melanism, is a hyperproduction of animal pigment, called *melanin*, which infiltrates the tissues. When localized in agglomerated masses, it constitutes the so-called melanotic tumor or melanoma. These tumors are found in all the domestic species, but most frequently in gray and white horses, especially in those with curly mane and tail. Melanin consists of small granulations, isolated or aggregated into larger masses, varying from a reddish brown to a black color. There are several varieties. One of those in the horse called *hyppomelanin*. Melanin is insoluble in all ordinary media, excepting alkaline solutions, and to a feeble extent, certain organic acids. Its average composition is as follows: Carbon 48 to 58—H 4 to 5—U 75 to 13.5—O 25 to 13—Se to 10 per cent. Fe often (Bard and Hugounenq). The choroid pigment of the eye contains neither S nor Te.

*Origin of Melanin.*—Much research and speculation have been indulged in upon the origin and the manner of elaboration of the pigment.

The older theories claimed the coloring matter of the blood, as the source (Kolliker and Rindfleisch).

Again, it was an interstitial hemorrhage, the hematin and hematoïdin being transformed into melanin (Breschet). By adding blood to an alcoholic solution of mercuric chloride, a pigment precipitate can be obtained having all the properties of melanin (Pouchet).

In generalized melano-sarcoma, Brandt and Pfeiffer have found a diminution of the red blood cells and in a horse and calf Bruckmüller and Bollinger found pigment granules in the blood, giving the latter a dark-brown color. The nature of the

\* Read before the Penn. State Veterinary Medical Association, May 2-3, 1909.

pigment was undetermined—whether hematin or melanin—and even if it was the latter it may have been absorbed by blood current or carried there by leucocytes.

The hemogenetic origin of the pigment is not sustained. Its physico-chemic properties, the form of the granulations, the high U and S content, the small per cent. and even absence of Te distinguish melanin from blood pigment. The high U and S content ally it on the other hand to an albuminoid derivative.

To-day we advocate the theory of cellular secretion identical with the origin of the normal pigment of the skin, choroid and pia mater of the sheep. This pigmentation in the normal organism is dominated by the so-called pigment cells or chromatophores situated in the pigmented parts. In the skin, for instance, and especially in dark-colored skins, they form a cellular layer between the rete mucosa and the derm. The chromatophore is of connective tissue (mesoblastic) origin, contains pigment granules and is capable of ameboid-like or migratory movements. Thus, the chameleon shows a rapid succession of colors according as the chromatophores migrate from a superficial to a deep situation in the skin and vice versa, or as these cells are seen throughout thick or a thin layer of epiderm. If a patch of white skin be transplanted upon a negro, the white area becomes black from chromatophoric infiltration.

The chromatophores have the power of secretion pigment granules and liberating them into the surrounding tissues. This function is controlled by certain nerve centres disease of which may lead to abnormal pigmentation. As with all other secretions, however, the blood furnishes the raw material and the physiologic manner of secretion by the chromatophores is comparable to that of saliva, pancreatic juice, mucus, etc., by their respective glandular cells.

The excessive and misplaced pigmentation of melanosis, therefore, seems to be a perversion of a normal function from causes not well known and by some attributed to trophic changes in the nerve centres that dominate chromatophoric pigment production. It is not difficult to understand abnormal pigmentation

in this way in the skin and subcutis where pigment is normally present, but the explanation of tumors at points where pigment is normally absent is less evident.

Pigment may be transported to distant places by the blood current or as in the embryonic theory of tumors it is more rational to attribute this to developmental defects in the embryo, to misplaced pigment cells or to certain embryonic cells which from unknown causes awaken and assume the functions of the latter. This view is strengthened by the occurrence of congenital melanoma and by the development in man of melanotic growths from pigmented moles in the skin. If melanosis were mere transposition of pigment with age from the general integument to certain localization, all gray horses should be equally affected, which is not the case. Again, we may see it in albinos among equida and in white cattle. In some individuals predisposition to melanotic tumors is more strongly hereditary than in others. Assuming that we are dealing with a perversion of a function congenital and hereditary, it still remains unexplained why this condition is so much more frequent in gray horses and at a time in life when their color changes. If relation is not one of cause and effect, is it one of common cause? Why is it not seen in all gray horses as their color becomes lighter?

*Nature.*—Melanosis is an infiltration of a tissue with melanin in small granular masses, thin layers and tumors into the interstitial tissue as well as the parenchymatous cells. The lesions are multiple but non-malignant and do not produce cachexia. Dissection of horse cadavers shows that the angularis, rhomboideus, serratus magnus and splenius are the first tissues effected, there is no clinical evidence and no deposits in any other part can be found.

Melanotic tumors are solid, without any special neoformation excepting some connective tissue hyperplasia sometimes slight, which may give the growth a lobulated appearance on section. Peripherally the pigment may infiltrate the surrounding tissue, or, when growth has ceased, reactive inflammation may lead to encapsulation of the tumor. In consequence of connective lique-

faction and superficial ulceration the contents become soft and fluctuating like an abscess.

The histogenesis of melanosis must not be mistaken with that of other classical malignant or benign tumors, infiltrated with melanotic pigment. Melano-sarcoma, the most malignant of all the sarcomas in man, is quite common in gray horses.

*Localization.*—No tissue is exempt. The *skin* and subcutis are the most frequent seat and the pigmentation is said to begin in the sweat glands (Blanc): Anus, elbow, forehead, etc.

*Muscles.*—Withers, mastoido-humeralis, intercostals, pterygoids, diaphragm, around the shoulder and hip-joints.

*Viscera.*—The spleen is most frequently involved and especially so with melano-sarcoma. Vibbert saw such a spleen that weighed 33 kilos.

*Liver.*—Disseminated tumors in the centre of the hepatic lobule resembling the "cardiac liver." Also as distinct tumors.

*Heart.*—Epi-Endo-, myo-cardium, valves. Visnet found a tumor weighing 25 kilos at the base involving the larger vessels.

*Lungs, kidneys, thyroid bodies, parotid and mammary glands* in aged horses.

*Nervous System.*—Meninges, cerebral lobes, cerebellum, lateral ventricles, spinal cord, nerve roots.

*Bones.*—Skull, vertebrae, ribs, pelvis, lateral cartilages.

*Ganglia* (lymphatic).—Sub-maxillary, bronchial, mediastinal, mesenteric. In the melanotic tumors may be found in the brain, cord, pleura, peritoneum, muscles and viscera. A case of generalized melanosis, though rare, was found in a white steer.

In the calf a form of congenital melanosis affecting many parts of the body, exists and subsequently disappears.

In the *sheep* melanotic tumors are sometimes found.

In the dog it is rare, and the pig is least susceptible. I saw a dog in which the peritoneal surface of the colon was studded with small pigmented nodes.

*Symptoms.*—These are functional and mechanical. The tumors of the skin are of all sizes. Some soften and discharge a "tarry" liquid when opened. The cavity heals slowly. At

the point of the shoulder they interfere with the collar; on the sides, with the girth; on the anus and vulva, with their functions; on the rectum, impaction and abdominal pain; on the prepuce, phimosis; on the eye, beginning at the caruncula usually, sup-puration and destruction of the eye; in the thyroid, cachexia; in the pharynx and œsophagus, dysphagia, jabat and haven; on the vagus and its branches, cardiac palpitation and roaring; in the lungs, dyspnœa and fatal hemorrhage in the liver and heart, hepatic and cardiac disturbances; in the submaxillary glands, suspected glanders; in the parotid gland, cerebral congestion; on large vessels edema of the extremities, and when in the chest or abdomen hydrothorax and ascites; in the brain, spinal cord and peripheral nerves lameness and paralysis in varying degrees. Maury saw radial paralysis from compression of the radial nerve by a tumor in the inside of the arm. Splenic lesions usually have no clinical symptoms. Bouley saw abundant perspiration of the left side of the face, ear, neck and shoulder from compression of the sympathetic. Local perspiration without any apparent cause is occasionally seen in horses and may be explained in this way.

*Diagnosis.*—This may be based on the location and multiplicity of the tumors, the color and age—usually above 10 years of the horse and use of the trocar. Particles of pigment will adhere to the end of the *canula*. A positive differential diagnosis can only be made with the microscope.

*Prognosis.*—This varies with the multiplicity and the functional interference of the tumors. With tumors of the viscera and those around the anus and vulva it is often unfavorable, although such horses may for many years render good service. In other locations it may be favorable as far as work is concerned. A true melanotic tumor, especially after it has ceased to grow and become encapsulated will not recur in loco, lead to metastasis nor produce cachexia. Extirpation has given me many good results. The uncertainty lies in whether we are dealing with melanoma or melano-sarcoma. The latter may recur, although perhaps not for some years. From an aged gray

gelding I removed the entire parotid gland the seat of a pigmented growth. The horse showed symptoms of congestion of the brain from pressure on the jugular vein during severe work. The result was very successful, but the growth reappeared after five years. No microscopic diagnosis was made. It probably was melano-sarcoma. Another tumor was removed from the tail of a gray mare. It recurred after several months and the mare had to be destroyed. The microscope revealed spindle-celled melano-sarcoma with some fibro-myomatous change. Another large tumor removed was from the point of the shoulder of a gray gelding. It was encapsulated and easily enucleated as if it were benign, although the copious hemorrhage from the tumor when incised indicated malignancy. It was diagnosed with the microscope as a mixed spindle and round-celled pigmented sarcoma.

Data are insufficient to show the relative percentage of simple melanoma and melano-sarcoma in pigmented tumors of gray horses.

*Treatment.*—Treatment consists in extirpation according to the rules of surgery. This may be done for cosmetic or for utility purposes. When usefulness is not interfered with, treatment may be deferred. When a tumor is a mechanical impediment to usefulness or much depreciates the animal's value and appearance, the surgeon should not hesitate, especially in the case of isolated and indolent circumscribed tumor of the subcutis. When the eye is affected the entire organ is removed. All pigmented tissue should be removed, although where not possible it may subsequently slough out and the parts cicatrize.

DISCUSSION.—Dr. RECTENWALD—Did Dr. Harger ever see melanosis in a bay horse?

Dr. HARGER—I did in a bay horse and in a sorrel.

Dr. LOCKETT—Do the suprarenal glands have distribution and pigment in melanosis?

Dr. HARGER—I have no knowledge that it is. I know of no investigation upon that point. That is one of the nerve centres that seems to control the formation.

## REPORTS OF CASES.

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### ACUTE LAMINITIS.\*

By O. C. SELBY, M. D. C., Worthington, Minn.†

In presenting to you this short treatise on Laminitis, I do not profess to have anything new to offer, either on the pathology of the disease or its treatment. The term "Laminitis" is used to indicate a spontaneous and diffuse inflammation of the whole of the sensitive structures of the foot, more particularly the sensitive laminae.

Usually it occurs in the two front feet, often in all four and occasionally in the hind feet alone.

ETIOLOGY.—In dealing with causes of laminitis, we will dispose of those coming under the head of traumatic, by saying that lesions of laminae thus occurring do not present the same symptoms or run an identical course with the disease I propose describing, and for which I would prefer to reserve the term "Laminitis."

From traumatic causes it goes without saying that there is either a simple congestion or an actual inflammation, localized, or general, of the laminae of the injured foot. In neither case, however, can the resulting mischief be closely compared with the lesions attending an attack of laminitis proper, a disease which appears to have an almost specific cause, and to run a course peculiarly its own.

The specific cause we have indicated as existing can, in the present state of our knowledge, be only vaguely described as a poisoned state of the blood stream. This, as clinical evidence teaches us, may result from a variety of causes. Among these, by far the most common is that state of circulation induced by excessive feeding with too stimulating or irritating a diet.

It is the laminitis following the feeding of new oats that causes the application to the food the adjective "Irritating."

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\* Read at Minnesota Meeting at St. Paul, January 13, 1909.

† Now at Redfield, S. D.

Here more often than not the peristaltic action of the bowels is found to be abnormally in evidence, and the excessive use of the diet is accompanied by more or less fluid discharge of the intestinal contents.

Another fruitful cause is a severe and continued inflammatory condition of the system elsewhere, known as "metastatic," and perhaps the most notable example of it is the laminitis following a prolonged case of pneumonia, and the parturient laminitis occurring as a concomitant or septic metritis.

**SEMIOLGY.**—Laminitis, in most instances is ushered in by a set of general symptoms such as are premonitory of the invasion of ordinary inflammatory diseases.

But according to "Reeks," even in this early stage there is a symptom which may lead one to an exact diagnosis. The feet are in turn lifted a short distance from the ground, and almost immediately replaced. This movement, "paddling" we may term it, is constant, the animal appearing to obtain ease in no one position for more than a few moments at a time.

Seen but a few hours later, when the swelling caused by the hyperæmia and the outpouring of the inflammatory exudate has led to compression of the sensitive structures within the horny box, the symptoms presented admit of no misreading. The patient now stands as though fixed to the ground. The pulse is hard and frequent, the respirations greatly increased in number, the body wet with a patchy perspiration and the countenance indicative of the most acute suffering. The feet themselves give to the hand a sensation of abnormal heat, and percussion upon them with the hammer is followed by painful attempts at withdrawal.

According as the front feet alone, the hind feet alone, or all four feet are affected, the symptoms will vary.

**PATHOLOGICAL ANATOMY.**—As with most inflammations of any severity, so with this, we may consider the pathological changes taken place in the foot under three headings, namely: First, the period of congestion, second, the period of exudation; third, the period of separation.

**CONGESTION.**—In the early stages of laminitis is a state of engorgement of the vessels of the keratogenous apparatus generally, but more particularly of the laminal portion of it. At this stage hemorrhages of the laminal vessels occur.



The escaping fluid infiltrates the surrounding connective tissue, and in many cases destroys the union between the horny and the sensitive laminæ. This change is most noticeable in the region of the toe.

EXUDATION.—The period of exudation marks the outpouring of the inflammatory fluid. This, still further, tends to destroy the union between the sensitive and the horny laminæ; leading finally to their complete separation at the region of the toe; this condition is usually seen when laminitis has been in existence about a week. With the sensitive structures thus detached from the wall, it is evident that very much that formerly held the os pedis in normal position has been destroyed, practically placing the whole body weight upon the sole. Never intended to bear the strain thus imposed it sinks. With the sinking is a corresponding "dropping" of the pedal bone, in fact whole of bony column.

Seeing that the structures above the hoof are still normally adherent to the bones, it follows that they must as the os pedis sinks, be carried with it. As a consequence we get a marked depression at the coronet. Here again, though to a greater extent than that caused by the hemorrhage alone, the os pedis appears to be pushed backwards, the space at the toe between the bone and the horny box being closely filled with a yellow and slightly blood-stained exudate.

The backward displacement of the os pedis may be accounted for in two ways, firstly, the greater vascularity leads to a greater outpouring of inflammatory fluid in the particular position. Here, therefore, loss of adhesion with the wall is greatest, while into the cavity so formed is poured a large quantity of the fluid that is practically incompressible.

Secondly, the manner in which the animal distributes his weight, namely, upon the heels, rather tends to aid the bone's backward movement, for with his feet in this position, tension upon the extensor pedis is relaxed while that upon the flexor pedis perforans is increased.

SUPPURATION.—Suppuration in laminitis is rare, and when found, as a rule, at the sole leading to almost entire separation of the sensitive and horny structures. The pain during this stage is nearly as great as in the foregoing stages, and the only relief obtainable is by giving the pus exit at the sole.

TREATMENT.—The treatment of acute laminitis in its early stage must be based upon the fact that we have to deal with the congested state of the circulatory apparatus of the whole of the keratogenous membrane. This fact was well enough known to the older veterinarians. It is not surprising, therefore, to learn that jugular phlebotomy was at once resorted to as the quickest means of relieving the over-charged vessels of their blood. As a matter of fact, jugular phlebotomy is still advocated by some modern authorities. Mechanically, of course, the removal of a large quantity of blood is bound to result in a lowering of the pressure within the vessels. The effect, however, is but transient. Blood removed in this way is again quickly returned to the vessels so far as its fluid matter is concerned, and the pressure removed for a time is again as great as before. With the other and more vital constituents of the blood stream, namely, the corpuscles, restoration is not so rapid. We have, in fact, a weakened state of the system in which it is probable it will not so successfully combat the adverse conditions the disease may induce.

Other means of combating the congested state of the membranes are local applications such as poultices and hot and cold packs; of these the cold applications seem to be the most effective.

Various methods of applying cold are in vogue, cold packs are probably most in favor. They must, however, be kept cold.

Internal treatment consists in administration of suitable febrifuges, and a purgative is productive of good when the disease has occurred as a result of long standing in the stable, and an overloaded condition of the bowels prevails. Sedatives are also indicated. In this connection I think aconite is chiefly used, although some practitioners have had very good results with hypodermic injections of morphine and atropine.

Regarding the dietetic treatment, during the first stages of the fever a light and easily digested diet should be allowed.

The animals should be kept warmly clothed and the box well ventilated. The patient's comfort should be attended to in providing him with a suitable bed.

Leaving the medicinal and dietetic treatment we may consider other treatments that come more particularly under the head of operative.

There are several methods of operating in vogue at this time; some on the sole, thus allowing the inflammatory exudate to escape from that point, others sometimes give the exudate an escape by making the grooves, known as "Smith's" operation. In this operation the hoof is so grooved as to allow of its expansion, thus relieving pressure on the sensitive structures within it, and incidentally, the inflammatory exudate is given exit. The first groove is cut down the center of the toe from the coronet to the ground surface; the second is made to the right of this, and a third to the left, each following the direction of the horn fibers and each about two inches distant from the first; each groove should be carried completely from the coronet to the ground surface, and each should extend through the substance of the horn until the horny laminae are reached. This done the under surface of the foot is grooved at the white line in such a manner as to entirely isolate the two pieces of horn from the remainder of the hoof. Expansion of the horny box is thus brought about; while at the same time semi-circular, a groove at the toe is made deep enough to allow free exit for the exudate.

Another similar method is to pare out perhaps a three-inch strip of horn from the coronet to the ground surface, thus relieving practically all the pressure from the region in which the exudate is the most profuse.

Operative measures, though not giving absolute ease, do undoubtedly relieve the more marked expressions of suffering.

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### PHENOL IN TETANUS.\*

By J. N. GOULD, M. D. C., Worthington, Minn.

Patient, brown mare, weight 1,000 lbs., 6 years old, owned by Mr. H. Thomas, Worthington.

Received a nail prick Nov. 10, 1908, and showed first symptoms of Tetanus on the 20th. Patient entered hospital Nov. 23, 1908.

The mare still ate and drank well on the 23d, the jaws became locked and patient could swallow with difficulty on the 24th.

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\* Reported to the Minnesota State Veterinary Medical Association at St. Paul, Minn., January 13, 1909.

The tetanus was general, but more marked in the anterior extremities, head and neck. The patient was placed in sling and kept there throughout the attack; and also during the convalescence, at night, to prevent getting cast. Phenol 50%, Alcohol 25%, Glycerine 25% was used in a mixture of wheat or graham flour and water. This was given once or twice daily, as the case required. A common horse catheter used as a nasal stomach tube, and the solution pumped through it by means of a common pump (injection pump).

On Dec. 6th and 7th, in addition to the phenol, aeth sulph. one ounce, camph. gum, one half ounce, was given.

From Nov. 30th to Dec. 3d, inclusive, the phenol was discontinued as the patient appears to have all it could stand, the flour solution was continued, however, during this period.

Treatment was discontinued on Dec. 16th and the animal was forcibly laid down on the 21st for the first time. From the 21st recovery from the tetanic symptoms was uninterrupted. The patient received the following amounts of phenol:

|           |       |                 |       |
|-----------|-------|-----------------|-------|
| Nov. 23rd | ..... | 1               | ounce |
| “ 24th    | ..... | 1               | “     |
| “ 25th    | ..... | 1               | “     |
| “ 26th    | ..... | 1 $\frac{1}{2}$ | “     |
| “ 27th    | ..... | 1 $\frac{1}{2}$ | “     |
| “ 28th    | ..... | 2               | “     |
| “ 29th    | ..... | 3               | “     |
| “ 30th    | ..... | 0               | “     |
| Dec. 1st  | ..... | 0               | “     |
| “ 2nd     | ..... | 0               | “     |
| “ 3rd     | ..... | 0               | “     |
| “ 4th     | ..... | 1               | “     |
| “ 5th     | ..... | 2               | “     |
| “ 6th     | ..... | 2               | “     |
| “ 7th     | ..... | 2               | “     |
| “ 8th     | ..... | 2               | “     |
| “ 9th     | ..... | 2               | “     |

From the 10th to the 15th the patient drank about one half ounce daily of the solution.

In all, the animal took twenty-five ounces of phenol in the seventeen days' treatment.

## MY EXPERIENCE WITH FOOT AND MOUTH DISEASE.\*

By DR. H. S. BEEBE, Albion, N. Y.

The title of my paper may lead you to believe that I have been to Asia, Europe or the Philippine Islands; but such is not the case, however, and my experience with this disease is so limited that I will, in order to make this paper of sufficient length, attempt to give a little general information in regard to the disease.

Foot and mouth disease is also known as aphthous fever, infectious aphtha, epizootic aphtha, and epizootic eczema, and may be defined as a highly contagious fever of an acute specific nature, characterized by eruptions of vesicles, or blisters in the mouth, around the comets of the feet and between the toes. All cloven-footed animals are susceptible, and Dr. Law states that probably no warm-blooded animals are entirely immune from this disease.

The symptoms briefly stated are as follows: a slight fever with impaired appetite, dryness of the muzzle, buccal mucosa and teats. Saliva may dribble from the mouth, and a smacking of the lips and tongue is often noticed. Eruptions the size of a millet seed appear on the dental pad, mucosa of the upper lip, cheeks and palate on the second and third day, and these increase in size, forming watering blisters that burst in from 36 to 48 hours, leaving the mouth very sore. Somewhat similar conditions prevail on the teats and around the comet and in the interdigital space of the feet. The animal may show great tenderness of the feet—very lame. This is especially true of hogs and sheep.

Under favorable conditions the fever subsides and the animal recovers in about fifteen days. The period of incubation varies from 36 hours to six days; two weeks in exceptional cases.

The geographical distribution is interesting. Asia has had the disease for centuries; Europe has had outbreaks in the present and last two centuries; America has had outbreaks in 1870, 1901 and 1908. According to accurate statistics collected by the German Empire, 432,000 head of cattle, 231,000 sheep, 154,000 swine, making in round numbers 817,000 animals, were affected with the disease in that country in 1890. During the

\*Read before January meeting, Genesee Valley Vet. Med. Ass'n, at Rochester, N. Y., Jan. 7, 1909.

same year it prevailed in France, Italy, Belgium, Austria, Hungary, Switzerland, Roumania and Bulgaria. In 1883 the losses in England is claimed to have reached \$5,000,000.

It can readily be seen how serious would be the losses to the stock owners should this disease get a foothold in the United States. With our immense cattle traffic, with the hay and straw trade, all stock yards would be more or less infected; cars would be infected; thus it would be impossible to receive foreign cattle without having to nurse the animals through the disease.

Another important feature in this connection is the fact that the animal does not become immune after once having the disease. Thus preventive inoculation is not only useless, but dangerous.

On Nov. 13 I received notice from Albany of the existence of this disease in Pennsylvania, and that the State and Federal authorities had traced the entrance of the infection into Pennsylvania from the Buffalo stock yards. The letter stated that no known cases existed in New York State at that time, but as a matter of precaution, the state veterinarians were asked to inspect herds in Western New York that had passed through the Buffalo stock yards some two weeks previous or during the time the yard was supposed to be infected, and report the result to the State Department of Agriculture at Albany. I inspected five herds with negative results, but the sixth herd was billed to C. O. Blake, of Bergen. He had received a carload of 57 young cattle from Buffalo on October 28, and had driven them overland to Brockport, a distance of ten miles, and sold them to farmers, dealers and butchers in the vicinity of the two towns mentioned above. Mr. Blake told me four of the 57 sickened and died before he sold any of them. In company with Blake I inspected about thirty of these cattle. I reported one steer on the farm of F. M. Green as having suspicious symptoms. The following week, in company with Dr. Mark Williams, of Middleport, I again visited the farm of F. M. Green and found the suspected steer in a healthy condition so far as outward symptoms were concerned. I reported that the suspicious symptoms had entirely subsided.

I also inspected the cattle of D. H. Love and George B. Nellis, both of Holley, N. Y. I found nothing suspicious on either farm at the time of my visit. Some time afterward I learned that other inspectors condemned the stock owned by the above Green, Love and Nellis. A very close watch was kept

of the cattle. State and Federal inspectors were sent there nearly every day, and from the fourteenth to the sixteenth day after my visit to the Love farm the animals were condemned and killed.

On December 8, 1908, Dr. McConnell, of Brockport, informed me of the existence of the disease on the farm of Louis Gordon, near Hamlin and in company with him I went to Brockport and saw the affected animals. At the time of my visit there were about 25 cows in the barn and at least 15 showed the characteristic symptoms. Blisters in the mouth in the region of the dental pad, varying in size from a pea to a quarter, appeared. The characteristic smacking of the jaws, the ropy saliva dribbling from the mouth, and the fever, went to make up the characteristic symptoms. The lesions on the feet were not very marked. Some, however, showed slight ulceration between the digits, while a few showed lesions on teats. These cattle did not come from the Blake herd, but were shipped in from St. Lawrence County and appeared to have the disease in three or four days after their arrival. The entire stock, excepting the horses on the farm, were promptly slaughtered and buried and the place disinfected.

I have inspected four or five other herds since, but with negative results.

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## THROMBOSIS OF POSTERIOR AORTA AND ITS BRANCHES.

By A. D. KNOWLES, D. V. S., Deputy State Veterinarian, Livingston, Montana.

On March 31, 1909, I was called to Belgrade, Montana, to treat an imported Percheron stallion which had been affected for five weeks. History.—The stallion had run loose in a box stall with a paddock opening from it for a period of about eight months and when taken out for exercise, after going some eighty rods, showed lame in off hind limb and with general nervousness. He was blanketed and carefully returned to the stall, where he seemed to recover his normal condition in about thirty minutes. The horse was not taken out again for a week, but developed the same symptoms as before, except that he fell before reaching the stall, but soon regained his feet and seemed to recover as rapidly as before.

On three or four subsequent trials the horse showed the same line of symptoms, with the exceptions of it requiring a shorter distance each time to produce them.

Upon arriving I found a black stallion eight years old in good flesh, weight about eighteen hundred pounds, roaming about in the paddock apparently normal except that the forward stride of both hind legs was shortened and there appeared to be a slight atrophy of both crural groups.

I immediately made a rectal examination and discovered that there was an absence of pulsation in both internal iliacs, and that the aorta just anterior to the quadrification exhibited a throbbing, rebounding pulsation.

Upon further palpation I was enabled to state positively that both internal iliacs were entirely closed by the thrombus and also the aorta to a point which occluded about one-half of the lumen of both external iliacs.

I drew a diagram of the condition for the owner and advised the destruction of the horse.

The horse was taken out and led a short distance, when there was a complete paralysis of both crural groups and the animal fell and continued to have convulsions for some twenty minutes, when he was shot.

In the autopsy I only had time enough to dissect out the aortic quadrification before the arrival of my train, and therefore did not get an opportunity to search for other lesions.

The thrombus is a thoroughly organized fibrinous mass and substantially corresponds with the ante-mortem diagnosis.

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## ANIMAL ACCIDENTS EXTRAORDINARY.

By GERALD E. GRIFFIN, D. V. S., Veterinarian 3d Field Artillery,\* Havana, Cuba.

Bay gelding, fifteen hands high, eight years old, was brought to hospital for examination and anti-tetanic serum treatment. Supposed to have punctured wound of left hind.

Examination by hospital surgeon was negative. The owner being an exacting friend, another examination was attempted half hour later, animal being secured by means of twitch. Far-

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\* Now in United States.



rier, who held foot in usual manner of blacksmiths, had on a pair of overalls, in the left hip pocket of which he carried farrier's or shoeing knife. The point of which protruded about two inches.

As we were about to apply the foot-searching instrument, the animal brought the leg forward with a jerk, throwing the farrier forward, outward and backward. He, to save himself from an expected kick, endeavored to turn his back to the animal's flank. The leg was recovered and immediately placed beside its fellow. The farrier stepping clear, knife still remaining in pocket.

We were about to direct the elevation of the foot a second time when we noticed blood oozing from an oblique, incised wound immediately in front of left hock. On causing the animal to move we were confronted by the peculiar action and symptoms characteristic of ruptured flexor metatarsi. On further investigation, it was learned that action of anterior digital region was controlled solely by the oblique extensor of the phalanges.

Prognosis unfavorable. Animal (polo type) absolutely refused slings.

Post-mortem examination revealed complete severance of flexor metatarsi above its bifurcation; also anterior extensor of phalanges. The wound evidently was inflicted while flexor and extensor were in extreme tension.

A race horse, in training, was "breezed" for half mile. Rider keeping him on outside of track instead of near rail as is customary. While going at speed both hind legs entered an unobserved, deep hole. This threw the rider forward and to the left, while animal was thrown to left and fell at right angles to his course.

Assisted to his feet and returned to stable with much difficulty.

Purchased six days later by a gentleman of speculative tendencies.

On examination at this time we found an abscess on the external angle right ilium, which was evacuated and dressed. In left gluteal region a considerable enlargement 8 by 9 was observed. This was explored later, but suspected pus not found. Great difficulty in locomotion, especially in backing. Temp. 103.4 F., Resp. 20, Pulse 67.

Rectal exploration revealed depression in left superior pelvic region. Diagnosis fracture of ilium near acetabulum.

Prognosis most unfavorable. Recommended destruction. Speculative owner declined. Patient placed in slings where he rested well for several days. Appetite good, and pulse, respiration and temperature almost normal.

On sixth day, paranoic owner, in our absence, decided on exercising the animal. He did so. This of course terminated our connection with case. On post-mortem examination two days later, discovered comminuted fracture of ilium two inches in front of coxo-femoral articulation, left side; also large pus cavity extending into gluteals. On right side, and almost exactly in same region, discovered another comminuted fracture surrounded with blood extravasation of recent origin.

The latter fracture was probably completed by fall from sling which took place on evening of sixth day.

A ten pound cur, while at play, runs across a field. A fool armed with the foil blade of a "sword cane" lunges at him, and literally runs him through. Animal falls with a howl, while the fool gives expression to his joy in the laugh of his kind.

Weapon entered abdominal cavity three inches from spine and immediately in front of last left rib. The point protruded one and one-half inches on opposite side three and one-half inches from spine and two inches behind last right rib.

Foil was withdrawn. No treatment except local disinfection and dieting. Animal attached himself to hospital and was enjoying himself in five days. He is apparently in good health after nine months. The fool had burnished the blade of his weapon on morning of outrage.

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## SOMETHING DIFFICULT TO DIAGNOSE.

By L. J. HERRING, B. S., D. V. S., Raleigh, N. C.

I am going to record my experiences with a case which has been a puzzle to me, and any one reading this will favor me by answering.

April 15th I was called to see a black gelding, which another veterinarian had been attending, but no seeming good was done. The horse belongs to a transfer man and does hard work most all the time, night work as well as day. The history further is that the animal was noticed to be sore behind, in the region

of the croup, failed to pass feces, made efforts often to pass urine, passing a little each time; the tail was noticed to hang as though dead, no use of it at all. In spite of all this, the animal was active and did not limp, but was incapacitated as to work.

Upon rectal examination, I found the bladder empty, as usual; the rectum as though paralyzed, dilated as large as the pelvic cavity and full of dry hard feces. About the length of my arm I could feel where the intestines were normal and constricted. I could find nothing else abnormal at all. The animal did not walk lame, but upon palpating the muscles anterior to the tail, there was much soreness, no elevated temperature, however.

With this condition of paralysis of the tail and rectum, soreness of muscles, stretching and often making efforts to urinate, passing some urine each time, no lameness, but a somewhat disposition not to want to work. I want some one to offer a diagnosis.

Treatment—I gave this horse a laxative, strychnine, iron and arsenic, and had the rectum emptied three times a day. Had a hot bran pack placed over croup every day, with very little results; some, however. I changed, but kept up the strychnine, and gave sodium salicylate, potassium iodide, and some buchu; had animal exercised, and I got some more evident results; but very slow and unencouraging. I have had the animal put to light work since.

There is some improvement; very much since I began treatment. The animal did not receive a blow anterior to the tail. Now with these few rough remarks, I will look for an answer from some one who cares to suggest a solution of this case.

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### DYSTOKIA IN THE SOW.\*

By Dr. BENNET PORTER, Albert Lea, Minn.

It is not an infrequent thing for the country practitioner to be called out to assist in cases of difficult parturition, during farrowing season with sows. And to the writer's mind this is one of the most undesirable pieces of work in the whole veterinary practice, for more reasons than one.

In the first place, it comes in the season of the year when the country veterinarian is very busy, with similar cases in mares and cows.

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\* Report read before the Minnesota State Veterinary Medical Association, at St. Paul, Minn., January 13, 1909.

And then, again, with the old style instruments, or even with the more improved methods of the present day, the cases are very unsatisfactory, and my experience is and I do not think that I differ materially from the ordinary man in this, in 90 per cent. of these cases we get a dead hog.

And this has annoyed me so much that of late years I have refused to make any expense to my clients, and have refused to go, and have got rid of them by telling them that they could take my instruments and go home and do just as well as I could.

I have studied over this a great deal, and have said to myself many a time that I believe there is a balm for every ill.

And so this continued until the spring of 1906, when one of my clients left word for me to call at his place as soon as possible.

On arriving, I asked him what was his trouble, and he informed me that he had a sow that had been laboring for two days.

I told him in plain words that I was no good, when he exclaimed there must be something to do. So I concluded to try and experiment and told him to take flax seed, make a broiler of flax tea, and take an 8 to 10-foot douche so as to have a little pressure; insert as far as he could and fill the animal as full as he possibly could, allowing the tea to be as warm as she could stand it, then let her rest. So the experiment was put to the test, and notwithstanding she had been laboring for two days, she gave birth to two pigs and came through all right and made a good recovery.

After trying this method several times I have become convinced that it is no more an experiment.

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#### *Editors AMERICAN VETERINARY REVIEW:*

With the hope of gaining some information from your readers, I am presenting the following case:

A Holstein cow seven years old had calved two weeks previous. Up to this time her health had been perfect, and she was an ideal dairy cow; perfect in build and a great milker. On the 8th of January she was milked and fed as usual. On the morning of the 9th she was found dead. The indications were that she died without the usual death struggle. We were called to hold a post mortem, the opinion being that it was a heart lesion.

On removing the stomach in a careful search for foreign substances, we found nothing but a normal condition. The lungs and heart were also removed, the former being normal, while the latter was not. The muscular wall of the right ventricle appeared flabby and loose; in opening into the ventricle from the auricle down to the base, there was found a well-formed thrombus, practically filling the lumen. Taking hold of its base and pulling gently, it was removed, coming from some distance in the jugular vein and also from the pulmonary artery. It was very tenacious. The same condition existed in the left ventricle, with the exception that the muscular wall was more firm and in appearance normal. The thrombus here extended some distance into the aorta. Can someone give us the primary cause of this condition? Our speculation is that this was a connate condition.

DR. MOYLE AND SON, *Waterford, Wis.*

This calf had curvature of the spine so that the occipital crest was only about six inches from the internal angle of the ileum;



the posterior limbs were twisted so that the calcaneum was anterior, and all flexor tendons contracted.

The uterus was lacerated from side to side so the placenta and fluids were in the abdominal cavity. The cow was in such condition that she was destroyed.

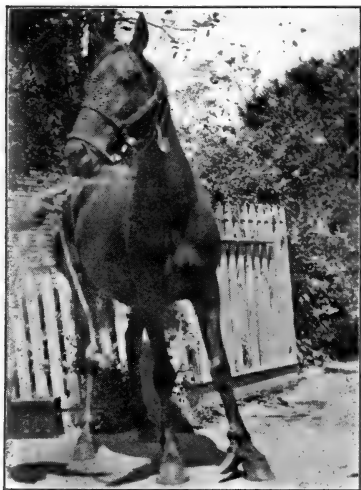
Yours very respectfully,

A. C. GILLIS, Keene, N. H.

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SANTA BARBARA, CAL., March 21, 1909.

*To the Editors of the AMERICAN VETERINARY REVIEW:*



GENTLEMEN—I inclose photo of a case that was presented in my practice.

The small metacarpal appeared normal for the usual length, the distal end suddenly expanded and formed a true articulation with the extra digit which seemed to be complete in all the parts.

We operated upon it, removing most of the enlargement on distal end of metacarpal bone, and the horse has been in active service for the past two years since operation.

Respectfully,

JAMES H. HESTER, V.S.

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## A CASE OF MALIGNANT OEDEMA: GLANDERS SUSPECTED.

By H. E. MYERS, Carey, Ohio.

One morning the latter part of March I was called to see the case in question: A black gelding four years old weighing about 1,400 pounds. And seemed to be in good condition.

The first thing that attracted my attention was an angry-looking sore about the size of a hen egg upon the fore limb, in the posterior brachial region. The owner explained to me that there has been a wart there, of which some still remained and, that several days previous he had undertaken to tie it off with a cord. The animal had bitten it with its teeth and caused the conditions as they were presented.

**SYMPTOMS.**—Temperature  $103\frac{2}{5}$ . Pulse 45. Appetite somewhat impaired. Mucous membrane showed extravasation of blood, slight discharge from the nostrils which was of a light color. The eye gave a haggard expression. Bowels constipated and covered with mucus. Further examination of the wound revealed a slight swelling around the wart which seemed to extend deep into the tissues.

**TREATMENT.**—Washed and dressed the wound with 1/1,000 Sol. of Corrosive Sublimate, ordered one quart of linseed oil given. Stated to the owner that I would call to see the animal the following morning. On arriving the next morning I found much more than I had anticipated finding.

The limb was now swollen nearly to the knee and from ten to twelve inches above the wound. Temperature  $103\frac{1}{2}$ , pulse 42, respirations slightly accelerated. Appetite entirely gone. The oil had acted as a gentle laxative. The swelling was extremely painful and several incisions were made which discharged a serous exudate. The next twenty-four hours developed nothing farther than still greater swelling which extended half way up the neck and back as far as the sheath. The animal moved around with difficulty, no weight being placed upon the limb.

As a precautionary measure I had the animal isolated and informed the owner that it looked very much like a case of malignant œdema, but that I was suspicious of acute glanders and that I thought it advisable to use the mallein test.

I suggested counsel on the case, to which the owner consented. I called Dr. G. W. Cliffe, and after making a thorough examination came to the conclusion that my suspicions were well grounded and to make the test at all events. Having ordered mallein from P. D. & Co., which had not yet arrived, I waited until the next afternoon and then made the injection about one cc.

Average temperature up to the time of injection,  $103\frac{1}{4}$ ; temperature at time of injection, 6 P. M.,  $103$ ; 12 P. M.,  $103\frac{1}{2}$ ;

3 A. M., 104; 6 A. M., 102; 9 A. M., 101. The temperature remained at the point and did not rise again. The wounds were dressed twice a day with a 1/1,000 Sol. of Corrosive Sublimate. The case improved rapidly with no other treatment. The question in my mind, which it is natural to suppose will come to yours, is this: What effect did mallein have upon the case? If any? What? How?

NEW YORK STATE VETERINARY COLLEGE graduated twenty-five men in veterinary medicine on June 17th.

"DENTISTRY" is the title of an article in this issue by Dr. R. M. Gordon Darby, that is unusually meritorious.

In making your plans, keep September 7, 8, 9 and 10 open for the convention of the AMERICAN VETERINARY MEDICAL ASSOCIATION at CHICAGO.

IN Dr. F. D. Holford's paper on "The Necessity of Proper Ventilation" in this number of the REVIEW, his display of knowledge of stable sanitation is a striking example of the broader education of the modern veterinarian.

RABIES has become quite widespread throughout Northeastern Kansas. Many cases have occurred in and about Hiawatha and Brown County, of which Hiawatha is the county seat, and that county has issued quarantine against dogs running at large, giving the public full authority to kill on sight any dog running loose and not properly muzzled. The enzootic has extended to St. Joseph, Missouri. The mayor of that city has issued a proclamation requiring that all dogs be immediately destroyed which are running at random without muzzle. Nearly two score of people in and about Hiawatha have been bitten by rabid dogs and have gone to the Pasteur Institute for treatment. Twelve or fourteen have also gone to the Institute from St. Joseph. The disease still prevails in and about Kansas City, but the cases are not so numerous as they were a year ago. Not more than twenty cases have been reported since the first of January. The brain and spinal cord of many cases have been sent to the laboratory of the Kansas City Veterinary College for examination because the public have become quite alarmed and want to be fully satisfied in any case where people have been bitten.



## ARMY VETERINARY DEPARTMENT.

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### THE OFFICIAL ARMY VETERINARY BILL RESURRECTED.

In the April issue of the AMERICAN VETERINARY REVIEW, we declared the official Army Veterinary Bill as dead. We did this in good faith, taking the facts as they were before us. The Congress, just ended, had failed to pass this bill as had two of its predecessors; we knew that there was opposition to this bill from some of our own army veterinarians which was considered sufficient to likely prevent its passage; and we knew that a new veterinary bill had suddenly sprung into life and motion which was favored by some influential army officers.

Thus it seemed to most of us that we had to deal with new issues. But the unexpected happened, and we learned through the pages of the Army and Navy Journal that the old Veterinary Bill, in its original form of 1905, has been officially reintroduced into the Senate and House of Representatives, and this with a promptness that was rather startling.

We were for a while without an explanation of this happening. Dr. Griffin, however, gave us in the June issue of the AMERICAN VETERINARY REVIEW the gist of an interview with an officer of the General Staff, which was permitted for publication, and which was fully explanatory of the new move. We do not doubt the sincerity of the utterances of this officer. He, like others of which we know, wish well enough for our progress, but their extreme conservatism and caution is bound to hold us down, more or less, to a level established by untoward precedences in the army, which can lead to nothing more than a continued makeshift of the army veterinary service, if such term can be claimed for it at all.

Yet, it is plain enough at this writing that the enactment of the old Veterinary Bill is all that is contemplated for us. Briefly, it is this or nothing, perhaps with the sanction of some minor changes. Additional strength was given to Dr. Griffin's published interview, by a letter of the Adjutant General of the Army to one of our older veterinarians well experienced in army veterinary legislation, stating that "the Secretary of War directs

that he be advised that the measure submitted by him (Nockolds-Fraser Bill) is not approved, but that Senate Bill 1692, introduced in the Senate April 15, 1909, will receive the approval of the War Department" (old bill). Finally, we are in receipt of a private letter giving us practically the same information.

*Alea facta est*, said the old Romans, and we might just as well benefit by their promptness of decision at a changed condition. Let us not lose all hope that we may yet persuade our military authorities that the reinsertion of the term "grade" and the promotion to a first lieutenancy after five years of service, will make this much disputed, old Veterinary Bill more palatable to its enemies, and will be, all round, more in accord with the veterinary progress in the army for which we are making a just and commendable fight in the face of no small obstacles.

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## RETIREMENT OF ARMY VETERINARIANS.

The Army and Navy Journal of May 29 contains the following note:

"Veterinarian John Tempny, 9th Cavalry, has asked that the question of his eligibility for retirement as a commissioned officer be submitted to the Attorney General. The Judge Advocate General, in an opinion submitted to the Adjutant General, holds that neither the laws regulating the retirement of commissioned officers nor those of enlisted men, are applicable to the veterinarians, and that it would seem that no form of executive relief can be applied in the case of Veterinarian Tempny, whose retirement, General Davis holds, can only be accomplished in the operation of appropriate legislation. It is therefore not recommended that the matter be referred to the Attorney General, but that it be submitted to Congress with the recommendation that the retirement of veterinarians be made the subject of statutory regulation," etc.

REMARKS.—It has been the belief of several army veterinarians, for some years past, that the Attorney General is likely to decide the question of retirement in their favor. Following the argument of this high judicial official in similar cases put before

him, it can hardly be otherwise. Dr. Tempany, 9th Cavalry, who is eligible for retirement on account of age, has now attempted to reach the Attorney General through military channels, but from the above note of the Army Journal quoted, it appears that the War Department may abide by the decision of the Judge Advocate of the Army, whose decision is unfavorable.

It is very important at the present time that this question be pressed. There are officers and veterinarians who think that a favorable decision of the Attorney General may show the present Veterinary Bill before Congress as quite unnecessary, as it would practically settle most of the points for which legislation is now sought, because "rank" is not a part of that bill.

It may be well to mention at this time that the Attorney General has been approached once before on the status of retirement of army veterinarians. This was done by the late Dr. Tracy, 8th Cavalry, in 1893 or 1894, and if we remember correctly, was by private correspondence through an influential civilian. At that time the Attorney General was of the opinion that the "veterinary surgeons, having the rank of sergeant-majors conferred upon them by Act of Congress of March 4, 1863, were entitled to retirement as enlisted men, notwithstanding the decision of the War Department that they were civilians." The matter was dropped at that time, because there were no veterinarians eligible for retirement and the "enlisted men clause" was not pleasing to the incumbents, although they agreed that it was a fair and square opinion.

Since then, by the Acts of Congress of March 2, 1899, and February 2, 1901, the status of the veterinarian has been materially changed. It came all through questions of pay, and the decisions were rendered by the Comptroller of the Treasury, Circular No. 47, Headquarters of the Army, Washington, D. C., December 8, 1900; and Circular No. 29, Headquarters of the Army, Washington, August 28, 1901, started the ball rolling and contained the decisions: "II. First-class veterinarians are officers and entitled to 10 per cent. increase of pay, etc.," and "XIV. Veterinarians authorized under Act of February 2, 1901, are entitled to increased pay for length of service." These decisions had a train of other decisions as a seeming consequence, and the idea that the veterinarian was a "civilian" which had been tenaciously adhered to by the military authorities up to that date, had to be dropped and has been almost entirely forgotten, but a little of it seems to have survived when it comes to the question of retirement of army veterinarians.

Quite recently, now, the Attorney General has decided that paymaster's clerks of the navy and mates of the navy are officers and entitled to retirement pay of the next higher grade. As far as we were able to learn, this decision was based on the Constitution. It argues that "By Article II., section 2, clause 2 of "the Constitution, officers of the United States can be appointed "legally (1) by the President, by and with the advice and consent "of the Senate; (2) by the President alone; (3) by the courts "of law; (4) by the heads of departments. Commissioned officers of the navy are appointed by the first method, warrant "officers in accordance with the second, and mates in accordance "with the fourth. *All are alike officers of the United States.*"

It seems reasonably sure that according to this decision the army veterinarian has a just claim coming that may clear up his whole present status and the question of retirement as well. It is not only our privilege but our duty to press this claim by employing proper legal talent, so that we may know where we stand before the present Veterinary Bill is taken up for consideration by the military committees of the Senate and House of Representatives. Let us stand together bravely and act promptly and vigorously. It is a matter that should be taken up by the Committee on Legislation of the American Veterinary Medical Association and worthy of liberal financial support, for it may save us from long-drawn-out and untoward veterinary legislation, in fact it may directly lead to an entirely new and better veterinary bill.

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### ARMY PERSONALS.

It is with regret that we chronicle the resignation from the army of Dr. John H. Oesterhaus, 7th Cavalry. As this was entirely unexpected news, we inquired for the reasons, and in his reply the doctor admits that "he is, indeed, sorry that the conditions of the veterinary service are such that he felt it his duty to resign, for he liked the army, army life, the army people and the professional work, but not the outlook for the future." By this resignation, we lose one of our best recent appointees. Favored by nature with manly appearance, of liberal education and polished manners, a good horseman, Dr. Oesterhaus has all the attributes that specially qualify a young veterinarian for

the army service. We can ill-afford to lose him and cannot suppress the hope that when proper legislation will have mended veterinary matters more favorable, we shall see him embracing the army career once more and for good.

Dr. Henry W. Peter, 14th Cavalry, has been granted a leave for four months to take effect July 1. We wish the doctor a well-earned rest and recreation after several years of hard, routine work in the States and the Philippine Islands.

Dr. Gerald E. Griffin, 3d Field Artillery, after a somewhat mysterious cross-country travelling which caused letters addressed to him to be returned with the remark "addressee unknown," has finally found a domicile at Fort Leavenworth, Kansas. Supposedly he takes the place as veterinary instructor at the School of the Line at that Post, and we extend to this old and well-tried colleague our pleasure and satisfaction at his new professional calling in the army.

O. S.

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AT THE BUTCHER'S.—"Is the meat dear?"

"No, ma'm; sheep!"—(*Philadelphia Ledger.*)

EXCELLENT WORK OF THE AMERICAN SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS IN GREATER NEW YORK.—The American Society for the Prevention of Cruelty to Animals has done good work in the provision of "watering stations" in that great metropolis, where horses suffer so much from the heat during mid-summer for the past few years, by providing pails, hose, sponges, etc., at many points where hydrant attachment can be procured. This is a wonderful help, as fountains cannot be obtained in profusion, and thousands of horses suffer and die while waiting for them. But in addition to these temporary "watering stations," the A. S. P. C. A. has arranged many permanent ones. It is now arranging to place a granite trough in St. Gabriel's Park (First avenue, between Thirty-fifth and Thirty-sixth streets), where it is badly needed. The money for this trough was given to the society by Miss Edith G. Bowdoin. The late Mrs. Marguerite Carter bequeathed to the society funds to be used for the erection of a fountain trough at McKinley Square, junction of Clinton and Boston avenues and 169th street (Bronx), which has become an accomplished fact. The fountain bears the inscription, "The Margery Daw Drinking Fountain." No better charitable object can be contemplated.

## ABSTRACTS FROM EXCHANGES.

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### ENGLISH REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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SPRAIN OF THE TRICEPS EXTENSOR BRACHII (DROPPED ELBOW) [*Henry Taylor, F. R. C. V. S.*].—There are two theories explaining the cause of dropped elbow: One is radial paralysis, the other sprain of the muscles. While fracture of the first rib may accompany the first, as demonstrated by many cases, the present article relates to the other. A two-year-old colt was being castrated. He had not been out of the stable for some time, and his muscles were not in a fit condition. Wild, he struggled very much while being cast and got his near fore foot caught in the halter. As a result, there was an undue stretching of the triceps and when, after the operation was done, he was unable to bear weight on the leg, and the elbow dropped. "When the foot was placed level with the other one, the knee pressed back and held there by pressure from the front he could stand, but directly the pressure was taken off and he attempted to move, the leg collapsed under him." He was with difficulty taken to his box and left without treatment. In a few days he improved, stood naturally, but had wasting of the triceps. In ten days he walked fairly. The muscles of the hind quarters had also wasted and he had to be helped several times to get up.—(*Veter. Record.*)

FATAL RESULTS FROM THE USE OF STRYCHNINE [*E. B. Reynolds*].—Referring to a case published recently, the author records three similar accidents to the one mentioned. Every one of them were put under the strychnine treatment a few days after an attack of parturient apoplexy, because of the inability of the animals to get up. For the first, the dose was a little over two grains and the other two received only one and a quarter grains at a dose. After taking the second dose, the first had frothing at the mouth and twitchings all over. She had spasms after an hour from the time she took the second dose. She died three hours later. The second cow behaved in the same manner, show-

ing the effects of the drug half an hour after the second dose. She died six hours after. The third cow showed spasms after the second dose also, and although chloral hydrate and morphia were administered, she died in two hours.

Not thinking that the dose was too strong, the death of the first cow was attributed to a peculiar idiosyncrasy. The death of the second under the circumstances looked strange and idiosyncrasy was doubtful. With the third case the idea of such was evidently an error and had nothing to do with the death. The writer asks for information.—(*Veter. Record.*)

FOOT-SCAB MITE OF SHEEP (*SYMBIOTES COMMONIS*, VAR. *OVIS*. RAILLET) [*T. W. Cave, F. R. C. V. S.*].—A flock of yearling Kent lambs had a number of lame ones, which the shepherd said "had insects in their feet." Covering the skin between the claws there were pinkish gray masses, which being scraped off and examined under a low objective were composed of collections of living acari. The flock had been folded during the winter and the fold bedded with thick hay and straw. At first it was thought that the acari might have invaded the interdigital space from the bedding and that they were not truly parasitic, but as mites in all stages of growth were found, and as they were frequently seen in copulation, it was evident that they were occupying their natural habitat and were actual parasites. All the lame animals had them. The parasites did not show any tendency to invade other parts of the body but the skin of the interdigital space, being attached on the short wool growing on it. A 2% solution of lysol destroyed them in the lambs that were treated.—(*Journ. of Comp. Patho. and Therap.*)

REMARKABLE WOOL BALLS FOUND IN THE RUMEN OF A SHEEP [*L. F. Gooch, F. R. C. V. S.*].—They were found in the rumen of a fat healthy yearling sheep. Ten in number, the largest had a diameter of 48 mm. and the smallest one of 43 mm. The biggest weighed 24 grammes and a half. When divided through the center, the cut surface had the appearance of fine felt and the mass was composed of fibres of wool. The fibres were considerably altered by macerating in the rumen. On the outer surface, the balls had a thin layer of mineral matter, presumably lime salts. They all were about the same size and shape and had a rather uniform appearance.—(*Ibidem.*)

EVENTRATION OF THE SMALL INTESTINES OF A MARE, RESULTING FROM AN INJURY IN THE HUNTING FIELD [*Thomas Wilson, F. R. C. V. S.*].—Well bred mare, rising 6, good hunt-

ress, while jumping a fence received a deep penetrating wound of the abdomen, close to the left external abdominal ring. The rider was not aware of the condition of the mare until told that the bowel of the mare was protruding through the wound. What distance the mare had traveled in that condition could not be ascertained. She was led to the nearest farm and placed in a box with a man holding her to prevent her lying, while another was fomenting the bowel with warm carbolic solution. There was between 2 and 3 feet of small intestine protruding through a wound about two inches in diameter. The intestine was much congested and showed signs of first stage of strangulation. The protruding bowel was protected with a piece of cloth saturated in carbolic solution, and the animal cast on sloping ground. After careful disinfection of hands and arms, and examination of the wound, the thorough cleaning of the wound and intestines was made with chinosol, 1 part in 5. As the wound was too small to allow the return of the bowel in the abdomen, it was enlarged, and after careful manipulations it was reduced. The wound was again swabbed with solution of chinosol for about 20 minutes. The musculature of the abdomen was sutured with silk aseptized by soaking in chinosol. The skin was sown up and the mare allowed to rise. She was placed in a stall with her hind quarters raised. The temperature never raised above 105° F. The pulse was strong and the appetite good. Laxative diet, a little quinine and stimulants were the after treatment. The animal was not allowed to lie down until after six days. The wound healed rapidly with very little suppuration and the mare went hunting at the end of eight weeks.—(*Veter. Journ.*)

SOME CASES OF AZOTURIA [*Dr. F. J. Braund*].—The writer says that by treating such cases with iodide of potassium, the mortality reported by some authors can be considerably reduced. He has given up the use of slings. Does not believe in bleeding; he has tried veterinary albumone, but is not in favor of it. He intends to give a fair trial to adrenalin. He will only mention some of the cases where he has obtained good and complete recovery. Of course there are cases which do not do well, even with the iodide treatment, but any how, with it in his hands he does not dread the disease as formerly and the mortality he has seen reduced to 5% out of 50 cases. And then he relates in a concise manner four cases which ended with satisfactory results in 4, 4, 7 and 10 days. The main drug resorted to being the iodide of potassium. Not neglecting, however, the use of the



catheter, physostigmine, mustard and blister, strychnia, etc. He mentions also an animal that had three attacks and was still alive. (*Veter Journ.*)

TREATMENT OF DISTEMPER [*John A. Raleigh*].—The author has experimented with various drugs, those recommended in text books and others, but it was not until acetozone was used by him that he became satisfied with the results. For the treatment of distemper to be satisfactory the writer esteems it highly essential that the patient should be disturbed as little as possible and it was this important fact that led him to obtain from acetozone considerably better results than hitherto, for it is easily and readily administered with the patient's nourishment. After giving 4 to 6 grains of calomel, acetozone (10 grains to a pint of water) is given mixed in condensed milk or sterilized cream. The dog generally laps it up. It may be necessary to drench him once or twice before he gets used to taking it alone. For the average sized pup 5 ounces repeated four times a day is the dose. After one or two doses the dog seems to get relief. On the second day of the treatment there is improvement and the animal can take food. Acetozone must be kept up until convalescence is perfect. With the writer the mortality has dropped from 40 to 10%.—(*Ibidem.*)

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## FRENCH REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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OVER-STRETCHING OF THE CORACO-RADIALIS IN HORSES [*Prof. P. Leblanc*].—Muscular lesions of this kind are often easily detected, but there may be some instances where the injury is not much accused, more difficult to detect, and may be overlooked, if the examination of the leg is not made very minutely. Here is an example:

A saddle horse becomes suddenly lame on the off fore-leg, after having the shoe of the right foot torn off with the shoe of the hind foot. The horse is lame on three legs. While at rest he stands plumb on both fore legs; when starting to walk, the lameness is much marked at first and improves some while the horse goes straight ahead, but it gets worse again in turning.

On examination there is no change in the shape of the leg, the articulations, tendons, bones, etc., are normal. Exploring the arm, a very painful spot is found on the coraco-radialis; the muscle is hard, in condition of contraction, and when pressed upon it gives rise to a manifestation of great pain. The lesion exists on this muscle alone. A stimulating friction of equal parts of blister and bi-iodide of mercury ointment was applied. It took three weeks for the horse to get well.—(*Journ. de Zootech.*)

INTRA-SCROTAL CHAMPIGNON [*M. M. Defosse and Perrot*].—A four-year-old stallion had been castrated and was sold before the wound had closed. On the right side cicatrization took place, but on the left discharge of pus continued. The sheath was swollen. After a little time, the general condition felt the effects and the animal had to be thrown to examine the exact aspect of a fistulous tract which was present in the wound. The end of the cord was found swollen, bleeding, and the seat of a well-developed funiculitis. With a first free incision the fistula was enlarged, but a second perpendicular to it was necessary so as to allow the introduction of the hand way up in the inguinal canal and isolate the cord from the surrounding tissues. This step was very difficult on account of intimate adhesions. Finally it was made loose, and the ecraseur was applied as high up as possible above the tumor, which was as big as the two fists and hanging at the end of the cord, which had the size of the arm of a man. After separating the mass with the ecraseur, it was found that the instrument had been applied too low, or had slipped down, the chain not being tight enough. The crushing had to be done again higher up. And even then, some of the diseased cord could not be removed. After two hours of difficult work the operation was concluded with little hemorrhage. There was no complication. The end of the cord sloughed away in due time and recovery followed with only injections of antiseptic solutions as after treatment.—(*Ibidem.*)

NEOPLASM OF THE OVARY IN A HEN WITH MULTIPLE GENERALIZATION [*Mr. Roquet*].—The subject of this observation was a one-year-old hen. She has always been delicate, although had abundant food and much care. A few days before death, she began to lose flesh rapidly. Passing the hand over her body, under the feathers, near the wings, on the internal face of the thighs, nodules elevated and of various forms and sizes are felt. They are movable with the surrounding skin. After pull-

ing the feathers off, they appear as big as peas, hemispherical, with a greyish or yellow-greyish color when cut through. Near the wings they are in groups of three or four and have a reddish ulcerated surface.

Post Mortem.—No adipose tissue anywhere. Muscles atrophied, pale and yellow in color. On opening the abdomen on the left side, instead of the ovary, there is a large tumor, flattened with encephaloid aspect, light grey-yellowish in coloration and soft in consistency. It is mammillated. The liver, big and soft, presents several nodules of various sizes. Spleen appears enlarged and softer than usual. The two kidneys are involved in the neoplastic substance. They are large, very soft, mammillated and of greyish coloration. Lesions of similar nature are also found in the digestive canal, in the lymphatic glands of the neck and chest. Heart and lungs and pleura presented nothing. Examined with the microscope, the structure of the lesions proved to be the same in all. It was a lymphosarcoma.—(*Journ. de Zootechn.*)

OESOPHAGOTOMY IN A CAT [*Mr. Ducorneau*].—Pussy is said to have swallowed a bone. Careful examination reveals on the course of the œsophagus a tumor as big as a ball. It is a foreign body of some kind. Catheterism of the canal is performed. The probang enters and slides well in the œsophagus, but when it reaches the obstruction it is found impossible to displace it. Oesophagotomy is necessary. The animal is secured, the parts well disinfected, and through an incision made on a level with the enlargement, the œsophagus is exposed. It is punctured, carefully incised and the foreign body, a sheep caudal vertebrae, is extracted. Two stitches closed the œsophagus after minute disinfection, and a dressing of iodoform ether applied. The cutaneous wound was protected with a simple dressing. Six days of milk diet, then eggs and milk for four days and on the eleventh day meat was allowed. Complete recovery in 15 days.—(*Bullet. de la Soc. Cent.*)

PERFORATION OF THE VAGINA DURING THE ACT OF COIT [*Mr. R. Parent*].—The writer says that it being an extremely rare accident, he thought it worth recording. It is the case of a heifer, 18 months old, which has always been in perfect health and was covered once without result, and two months later presented to another bull of four years, strong, and which had not served cows for a few days. Since this second covering the heifer remains with her back arched, her coat is dull, rumination

is gone, the fæces are black and coated, micturition is painful and the temperature is  $40^{\circ}$  C., the pulse 55 and the respiration 12. Through the rectum a swelling as big as a duck's egg is found on the floor of the pelvis and pus is squeezed out of it through the vulva, which being very small, prevents all surgical interference. The animal was sent to the butcher. On the floor of the vagina, a little forward of the urinary meatus, there is a fistulous tract which opens into an abscess containing pus having a very offensive odor.—(*Rev. Gener. de Medec. Veter.*)

CHONDROMA OF THE HUMERUS IN A COW [*Mr. Eisenmenger*].—The animal presented near the left shoulder an oval tumor, painless, hard and covered by normal skin. It extended from the superior third of the scapula to the middle of the humerus and from the shoulder joint to beyond the posterior border of the scapula itself. It did not interfere with locomotion. The animal was slaughtered. The growth was found firmly attached to the deltoid impress of the humerus; it is cartilaginous in nature, measures 43 centimeters in its vertical axis and 36 right across. It weighed 9 kilogs. 365 grammes. This chondroma was probably the result of traumatism and was interesting by its rarity and its enormous size.—(*Rev. Gener. de Medec. Veter.*)

VAGINAL LACERATION FROM COIT IN A SLUT—DEATH BY HEMORRHAGE [*M. M. Douville and R. Germain*].—This animal had had already three litters of pups. She never had any trouble and was served by the same dog every time. The last time after being covered she had bloody discharge from the vulva. In the evening she seems all right. The next morning she is dull, lying down, and a clot of blood is found in her bedding. She has fever, her visible mucous membranes are pale, the respiration is accelerated, the pulse a little quick. Warm boiled water injections in the vagina are prescribed and 250 grammes of physiologic serum are given sub-cutaneously. Although she appeared better later in the day, the hemorrhage has returned during the night and some of it drops yet by the vulva. Digital exploration is negative and no solution of continuity is detected. Same treatment is followed by short improvement. But this is only temporary as the hemorrhage returns, and notwithstanding energetic treatment the slut dies in a few hours. At the post mortem, every organ was found healthy except the genitals. At the inferior face of the vagina, there was a little ecchymotic spot, alongside the course of one vaginal artery. And while this ecchymosis existed on the outside face, in examining the internal

face of the organ, opposite it, there is a narrow straight tear whose edges are kept together by recent clots of blood. In separating them it is easy to see that the vaginal walls are all torn and that the artery was involved in the injury with its coats being also torn, internal hemorrhage and death resulting from it.—(*Rec. de Medec. Veter.*)

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## BELGIAN REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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COMPLICATED LEUCORRHEA IN A MONKEY [*Prof. Hebrant and Antoine, Assist.*].—This animal had a very large tumor which on superficial examination could be taken for an hypertrophied or hyperplastic process. The ischiatic prominences were covered with a growth, rounded in the center of which could be seen the depressed anus and vulva. This mass, which was flattened, extended laterally over the gluteal region and appeared as a fixed cushion upon which the animal was sitting, apparently not inconvenienced by it. Defecation and micturition were performed normally. The growth was neither congested nor inflamed. To make a better examination it was necessary to secure the animal in a proper manner, and then it was found that the tumor was a firm œdema and that there was a discharge from the vulva, which was of milky appearance, mucous, and when examined with the microscope, showed white corpuscles, vaginal epithelial cells and no red corpuscles. The case was one of vaginal leucorrhœa complicated with the ischiatic œdema, resulting from the irritation of the discharge rubbing on the ischial tuberosities when the animal was sitting. Injections of boric solutions made twice a day, massing applied to the œdema were followed by recovery in short of ten days.—(*Annales de Belg.*)

RESEARCHES UPON ENZOOTIC CEREBRO-SPINAL MENINGITIS [*Mr. Marcq*].—This affection known in Belgium under the name of "Aizeau's Disease," is considered by some as a specific microbial disease, and by others as an autoxidation from substances existing in fodders. The writer has followed this affection in a stable of eight horses where three became diseased, and in another with seven horses where six became affected.

These horses had paraplegia, with spasms, during which they struggled violently. From cultures of the cerebral substance of one animal that had died, the author succeeded in isolating a microbe, single or double elements, analogous to those described in Germany and found in the district of Bronn. The march of the disease is irregular, generally completed in eight or ten days. Often there are complications of pneumonia by foreign bodies. Mortality may reach 70 to 80%. Paresia of the hind quarters is a very frequent sequelæ in recovered cases. It is always indicated to isolate the sick and to disinfect the floor of the stables so as to guard against contagion by urine and fæces. The use of slings is recommended. Empty the bladder as well as the rectum, as necessary. Medical treatment is doubtful in its results. Iced compresses, calomel, iodide of potassium, subcutaneous injections of camphorated ether or artificial serum.—(*Annales de Belg.*)

REMARKS ON THE NATURE OF HYPERTROPHYING OSTEO-ARTHROPATHY—A CASE OF IT IN A TUBERCULOUS HORSE [*Prof. Lienaux*].—The author recalls the work done previously, which had a tendency to attribute a certain number of cases of the bony syndroms of Marie to tuberculosis. Hypertrophying osteoarthropathy of man is exactly similar to the diffuse osteo-periostitis of dog, to the macroscopical and the histological point of view. Ball and Alamartine have recently described a case of this last affection in a tuberculous dog. Prof. Lienaux reports a similar co-existence of the two diseases in a horse and says: "It seems, without doubt, and with perfect reason that the actual tendency is to attribute the bony processes in question to toxic action, peculiarly to toxi-infection and it is not at all contrary to the teachings of general pathology to make as interfering in their genesis, the toxines of Koch's bacillus on the same manner as the toxines of syphilis and other diseases have been accused of before them. But it is certain that the hypertrophying osteoarthropathy can exist outside of tuberculosis, as it is proved by the case of diffuse osteo-periostitis of dogs in which tuberculosis was not present. I also believe," adds Lienaux, "that there is no need to consider these bony lesions, when associated with tuberculosis, as a localization of that disease, attenuated or not. If the multiplicity of the interested bony structures, the invasion of all the tissues of the bony system, periosteum, bone itself, marrow, demonstrate the existence of a general state reacting upon this system, the almost perfect symmetry of the altera-

tions, authorizes one to admit that the morbid influence comes from the nervous centers. The observed bony lesions appear then as neurotrophic troubles, and this pathogeny is sufficient to explain the want of an adequate specificity to that of the toxins which have produced them only in an indirect manner."—(*Bullet. de l'Acad. de Medec. de Belg.*)

TWO CASES OF SARCOMA OF THE SHEATH OF THE PENIS IN THE DOG [*Prof. Hebrant and Antoine, Assist.*].—The interesting part of these two cases rests on the situation occupied by the tumors which was quite similar in both animals and in both being located in the suspensory ligament of the sheath.

The first tumor was found in a dog which had been chloroformed to death. Between the inferior face of the abdomen and the superior border of the penis there was a tumor which had pushed the penis away from its position. The growth was as big as the fist of a man and was ulcerated on its surface. The skin was not adherent to it except round the edges of the place where it was ulcerated. It was a sarcoma.

The second case belonged to an animal which passed bloody urine frequently and carried a swelling on the penis. Indeed, in the thickness of the sheath there is a tumor as big as two big fists, which is covered with congested skin, and is formed of two growths, one to the left, the larger, and one to the right. They are hard, bosselated, irregular, not adherent to the skin, to the abdominal walls nor to the penis. After chloroformisation and subcutaneous injections of adrenalin, the left tumor was exposed, dissected and removed. The right one was enucleated through the same incision, after division of a fibrous band which separated the two neoplasms. Antiseptic dressing was applied. The two growths weighed 310 grammes and proved to be sarcomatous in nature, as in the first case. Recovery was perfect.—(*Annal. de Belg.*)

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## GERMAN REVIEW.

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By J. P. O'LEARY, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

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SOME OPINIONS CONCERNING FLATULENT COLICS IN THE HORSE [*Prof. Hendricks*].—All clinicians agree that in the majority of cases of colics in the horse, and especially those of

a flatulent nature, it is difficult to determine an exact etiology. The chief cause of the latter may be sought in the lack of contractility of the intestine, a condition which the author ascribes as not being the cause but rather the result of abnormal fermentation taking place in the intestine. Hendricks is of opinion that the intestinal paralysis is the result of the hyperextension of the intestinal walls under the influence of the rapid accumulation of gases. If that were not so, why should the pathological condition be relieved immediately after puncture of the intestine? According to the views of the author, feed plays a minor part in the etiology of colics, because it appears after each kind, be it oats, barley, maize or green food. On the contrary, the quality of the food has the greatest influence, and it is the mouldiness of the latter which is the prime factor. He had eight fatal cases in a stable as a result of corn feeding, the examination of which revealed the presence of small black specks formed by mould fungi and which had enveloped the embryo. It must therefore be accepted that through the action of the lower organisms digestion had become instantly modified to the extent that besides the normal gases a large quantity of similar gases formed which can only take place in lesser proportion under physiological conditions. These gases are sulphuretted hydrogen and carburetted hydrogen, which especially form and accumulate in the large intestine. Horses attacked with flatulent colics either die or recover within twelve hours, but when the abnormal fermentation is checked and the gases already formed escape per anus or by means of puncture, a fatal issue is avoided. Death may be attributed to many causes. A quantity of these gases are absorbed by the intestinal mucous membrane and from there it is conveyed to the blood, where it produces blood poisoning. On the other hand, the extreme distension of the intestine, the diaphragm being pressed forward and immobilized, interferes with respiration and the interchange of gases, resulting in surcharging of the blood with carbonic acid. In many cases death has resulted from rupture and overdistension of the intestinal walls, which is aided by the sudden and violent falls of the horse in his intense pain. In consideration of the rapid progress of the disease the treatment must be energetic and timely. First of all we must aim to hinder blood poisoning, which is best accomplished by puncture of the cæcum. We must use a trocar of small diameter which permits the gases to escape freely and which, after being withdrawn, allows the



punctured edges to close immediately and leave but a slight wound behind. The puncture is made in the center of the triangular space which is formed by the transverse processes of the lumbar vertebrae, the last rib and the superior border of the oblique abdominal muscles. The trocar being pushed downwards and outwards in order to avoid injuring the kidney, then we are certain no fatal results will follow. The alarming condition of the horse immediately becomes better and the practitioner has now only to prescribe some suitable medication. The contraction of the intestines is brought about by a subcutaneous injection of eserine and by copious infusions of cold water in the rectum. The author gives also 2 grammes of calomel every half hour for 3 hours. This has an antiseptic action and arrests or diminishes further fermentation in the intestines. Through its purgative effect it removes a portion of the matter liable to fermentation. It is thought that puncture of the intestine (cæcum) might produce peritonitis, but this can be avoided by the use of a small trocar. The superiority of this method of puncture counteracts its disadvantages. In spite of antiseptic precautions at the seat of operation and a sterilized trocar, infection can take place, as the intestine might have been punctured, and in withdrawing the canula particles of excrement containing bacteria are deposited in the subcutaneous connective tissues of the flank. However, this condition is not dangerous, as by means of a small incision we can secure the escape of pathogenic products. In conclusion the author advises never to delay puncture of the cæcum because through this almost undangerous operation a large number of horses suffering from flatulent colics can be saved.—(*Berliner Tier. Wochenschrift*, No. 25, 1908.)

CYSTITIS AND ITS TREATMENT [*Prof. D. Gmeiner, Gießen*.—The author refers to the fact that each case of cystitis is microbic in origin. The infection occurs as a rule through the adhering pathogenic bacteria when a congestive condition of the mucous membrane of the bladder exists, or infection may be facilitated through retention of the urine. There are three forms of infection: First, the urethral or urogenic, also called the ascending; second, the infection of the bladder walls through the deposition of bacteria from neighboring sources; finally, the renal or descending or hæmotogenous. Regarding the treatment of cystitis, the remedies recommended are usually prescribed in doses much too strong. It is evident that a 3 per cent.

carbolic solution, 1 per cent. silver nitrate solution, 2 per cent. ichthyol solution, and 1 per cent. corrosive sublimate solution irritates to a marked degree the sensitive mucous membrane of the bladder and consequently aggravates the local disorder. If we desire to obtain good results by means of lavage, we must select substances which possess corresponding disinfecting properties but which must be absolutely non-irritating in action. As such, Gmeiner recommends for internal medication urotropin (Hexamethylentetramin), and for local treatment and vesical irrigation the preparation Hydrargyrum oxycyanatum. Nicolaier has proven that urotropin when given internally, under the influence of blood pressure in the kidneys, splits up into formaldehyde, and the latter part as such and part, combining with urinary substances, hinders the growth of microorganisms and restricts their action along the urinary passages. Furthermore, Urotropin has the advantage of being a uric acid solvent and produces diuresis. Besides, it is a fact that the name Urotropin is patented. However, we can dispense with Urotropin and substitute Hexamethylentetramin, the latter being eleven times cheaper than the former. Regarding irrigation of the bladder, Hydrargyrum oxycyanatum is recommended. Like corrosive sublimate, it is prepared for the trade in tablet form. This agent has displaced corrosive sublimate to a large extent. In *Veterinary Medicine* Richter (Dresden Clinic) called attention to its very valuable properties in the B. T. W., (1903, p. 289). The preferential claims for the mercurial cyanide depends upon its non-irritating action on the tissues, its excellent curative properties, and even in a dilution of 1 to 1,000 is preferable in many surgical cases to all other disinfectants. Gmeiner examined carefully the urine (centrifugated condition) of each sick animal and found that cystitis occurs more frequently in animals than is generally known. The author reports nine cases of cystitis which he treated successfully with the preparation above mentioned. In the ninth case he experimentally produced hæmorrhagic nephritis and cystitis in rabbits; two of the control animals died which were not treated. The price of the preparation, Hydrarg. oxycyanatum, is 1 M. 65 pf. for 100 grammes. Hexamethylentetramin costs 70 pf. for a like quantity, and Urotropin 7 M. for the same weight. Gmeiner compiles his results as follows. 1st. Hydrarg. oxycyanatum, in a concentrated solution of 1-5,000 to 1-10,000 in water with the addition of a like quantity of magnesium sulphate is a disin-

fectant eminently satisfactory for lavage in inflammations of the urinary tract, especially cystitis in the domestic animals; besides, it is non-poisonous and perfectly non-irritating. It is a staple article and cheap and has a most extraordinary bactericidal action. 2d. In Hexamethylentetramin (also termed Urotropin) we possess a preparation which is of inestimable service in the internal treatment of nephritis, pyelitis and cystitis. The dose for small animals being 0.5-1.0 grammes three times daily. For larger animals, 5-10 grammes three times daily, well diluted. 3d. The combination of both methods of treatment give excellent results in cystitis of the domestic animals.—(*Monatsheft für Wissenschaft und prakt. Tierheilkunde*, xviii. Bd. 1 und 2 Heft.)

THE MEDICATION TREATMENT OF RUMINANTS [*S. László, Ungarn*].—In the administration of medicines to ruminants we frequently fail to consider the form in which the agent is to be given and that part of the gastro-intestinal tract it is intended to act upon. For instance, we are apt to prescribe remedies in solid form which should act upon the intestines and those in fluid form which should act upon the stomach. László experimented with suckling calves, cows and sheep. He administered to those animals harmless substances which could be easily recognized in the digestive canal and which were given both in fluid and solid forms. The results of his experiments are as follows: In the case of suckling calves, the larger part of the fluid given was found in the fourth stomach. In grown cattle, the substance given in solid form was almost invariably found in the infero-posterior part of the rumen, while the larger portion of the agent given in the fluid form found its way into the second and third and fourth stomachs and only a minute quantity was discernible in the rumen (in the anterior sac). The fact that the fluids having been found in the second, third and fourth stomachs and the solids remaining in the posterior sac of the rumen should always be borne in mind when prescribing medicines for ruminants. Before deciding as to the form in which the remedy is to be given we must consider the particular portion of the digestive canal it is intended to act upon. Agents to be administered in order to excite gastric peristalsis in overloading of the paunch should not be given in fluid form, as only a small portion gains the stomach. Again, it is not advantageous to prescribe remedies to act upon the intestines in solid form, as they remain for an indefinite time in the paunch and only later reach the intestines in small and diluted quan-

tities. Drugs which have an irritating action upon the mucous membranes are best administered in the form of a bolus with linseed meal as an excipient, or a decoction of flaxseed as a vehicle. We can only get good results with fluid remedies in the stomach when they are administered by means of the stomach pump.—(*Berliner Tierarzt. Wochenschrift*, No. 8, 1907.)

A CONTRIBUTION TO THE STATISTICS OF CANINE DISTEMPER [*Dr. Wierth, in the Medical Clinic of the Imperial Veterinary High School, Vienna*].—Dr. Wierth compiled statistics from the year 1901 to 1906 regarding the occurrence of distemper according to breed, sex, character of the disease and results of treatment. He concludes from these statistics that the breed has no influence on the number of animals affected with the disease. However, there seems to exist some physical force in certain breeds in regard to the favorable or unfavorable termination of the distemper. The least unfavorable issue exists in the breed of fox terriers. Wierth found, further, that females possess a greater disposition toward the nervous form than males, and that the mortality among puppies was no greater than in grown animals.—(*Tierarztliches Centralblatt*, No. 13, 1908.)

ACUTE GASTRO-ENTERITIS IN A BEAR [*Dr. H. Jakob, Munich*].—Jakob diagnosed acute gastro-enteritis in a four-months-old brown bear which fourteen days previously had been imported from Russia. The symptoms were inappetence, nausea, vomiting, diarrhoea, uneasiness, great prostration. The fearful cries of the animal prevented a closer examination being made. The bear was placed in a warm room and given 5 grammes of Tannoform daily in a decoction of rice and milk slightly sweetened. Five days after the bear had completely recovered.—(*Wochenschrift für Tierheilk. und Viehzucht*, 52 Jahrg., No. 6.)

THE INJECTION OF BORACIC ACID SOLUTION IN THE TREATMENT OF MASTITIS OF THE COW [*Vet. F. thor Straten-Faxe*].—Dr. thor Straten treated cows since the preceding autumn with injections of boracic acid solution. He employed for each injection 150 c.cm. of a 3 per cent. solution. In all he treated 16 cases.

- 1 case, 1 injection, cured after the 3d day.
- 8 cases, 1 injection, cured after the 7th day.
- 5 cases, 2 injections, cured after the 14th day.
- 1 case, 2 injections, cured after the 18th day.
- 1 case, 2 injections, lost one quarter.

In the two latter cases the secretion was brownish in color and emitted a very disagreeable odor. The author assumes that the results would have been decidedly better had he been given the opportunity to treat fresh cases. Unfortunately he was always called upon to treat cows in which the disease had been of many days' duration.—(*Maanedsschrift für Drylaeger*, 18 Band, Heft. 11.)

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## OBITUARY.

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### MILIKAN STALKER, V. S.

PROF. MILIKAN STALKER, of the Iowa State College, died at his residence, Ames, Iowa, June 14, 1909, in his sixty-eighth year. Dr. Stalker was born in Plainfield, Indiana, on August 6, 1841. He came of Quaker ancestry, and his purity of character was one of his principal charms. Earnest and progressive from the start, he headed the first veterinary school of the west, in directing the veterinary department of Iowa State University, which was opened in 1878. His influence upon the character of the graduates of that institution is plainly evident in some of our best known American veterinarians. His demise will be deeply regretted by the entire veterinary profession of the country.

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FROM extensive reports in *The Register* and *The Advertiser* of Adelaide, South Australia, we learn of the prevalence of "Dry Bible" in the north, around the dairying centres of Orro-roo, Hammond, Amyton and Quorn. At the latter place the death rate has been high. On one dairy farm stocked with forty milking cows, the whole herd have succumbed to the disease, while on other farms fifty to seventy-five per cent. having the disease have died. The disease is found under all kinds of conditions, such as on "salt bush country," where there is an abundance of feed, and where unlimited supplies of deep well and dam-water exist, as well as in other sections that are dried up; what little herbage there is left being dried to a tinder and far from being nutritious. Chief Government Veterinary Surgeon Desmond has been engaged for several weeks making a careful investigation, and his report on it will, no doubt, be interesting.

## CORRESPONDENCE.

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*To the Editors of the AMERICAN VETERINARY REVIEW:*

In connection with your remarks in the June REVIEW in relation to the forthcoming meeting of the New York State Veterinary Medical Society, I beg to remind the members of the society that at that meeting there is to be nominated ten veterinarians, from whom five are to be selected by the Board of Education to constitute the incoming State Board of Veterinary Examiners, who will hold office for the succeeding five years.

No other veterinary society in America carries so important a responsibility in reference to the advancement of the veterinary profession as does our state society. In nominating the men from whom the State Board of Veterinary Examiners is to be constituted, the veterinary profession of New York shows its aims and ideals, by the character of men whom it selects. The work of the Board of Examiners constitutes an official record which is open to inspection and comment of the veterinary profession at large. If the veterinary profession in the State of New York is to advance in harmony with the pretensions of its members, the personnel of the examining board should be such as to command the respect of the profession in America at large.

During the existence of the Board of Examiners, it has more than once laid itself open to very unfavorable criticism in many respects. As a general rule, the personnel of the Board has been thoroughly representative of the profession at large. On the Board there have been, and now are, some of the representative veterinarians of the state, whether regarded from the professional or the moral standpoint. There has, however, been much carelessness shown in the nomination of candidates for appointment to the Board, and this carelessness has reflected more or less seriously upon the body of the profession as a whole. Among the criticisms which may well be mentioned, a serious one is that of delay on the part of the Board in marking the papers of the candidates for license. As a general rule, the examination papers submitted in June are not marked completely until late in August or in September, and the graduate who has applied for license is held up for a provokingly long period, so that he is strongly

tempted to violate both the letter and spirit of the law, by entering into practice prior to license. Just where the trouble lies it is difficult to determine, but, apparently, the delay is usually caused by one or two negligent members, who, apparently, have something else at heart besides the honor of the profession in the state.

A more serious criticism is the character of the examinations themselves. Sometimes the list of questions submitted exhibits a regrettable degree of ignorance upon the part of the examiner, showing quite well that he does not recognize the difference between an important and a worthless question. An examination for license should be a real test of the fitness of the man to practice veterinary medicine and surgery. In other instances, the examiner evidently looks up some catch question in some veterinary book, or evolves some trivial catch question in order to give an impression of his own learning. Sometimes the question seems to be framed with the express intent of confusing the candidate or of misleading him. Sometimes there seems to be even more sinister motives behind the questions.

The following is the official examination paper of a recent examination in surgery:

*University of the State of New York*

No.

49TH VETERINARY EXAMINATION.

Place

### SURGERY

Wednesday, June 26, 1907—1.15 to 4.15 p. m., only

*Answer any 10 of the questions on this paper but no more. Check (✓) the number of each one of the questions you have answered. Unless otherwise stated all questions relate to the horse.*

1. Describe *two* methods of securing the hind limb by side line.
2. Describe *three* of the following methods of throwing a horse: Rohard's, Rarey's, the Russian method, the Danish method, the Stuttgart method.
3. Describe a method of casting and securing an ox.
4. Draw *three* designs for line cauterization.
5. Give the symptoms and the treatment of umbilic hernia.

6. Give the differential diagnosis of furunculus and lymphangitis in the hind leg. Give the treatment of each.
7. Describe Hobday's hobbles for the dog.
8. Describe the process of removing the first, the second, or the third molar without trephining.
9. State when it is necessary to float the molars and how it should be done.
10. Give the symptoms, prognosis and treatment of thrombosis of the external iliac artery.
11. Give the symptoms and the treatment of luxation of the patella.
12. Describe Wolf's mouth speculum or gag for the dog.
13. Describe a method of castrating swine.
14. Describe a method of castrating birds.
15. Give the symptoms and the treatment of rupture of the flexor metatarsi muscle.

A careful perusal of this list of questions illustrates very well the force of the criticisms which we have suggested above.

In the entire list of questions there are but six or seven which may be regarded as straightforward and of practical importance, and among all of these there are but two or three which have any great merit as tests of the ability of the candidate.

It is not at all surprising that a large proportion of candidates for license failed in their examination upon this list of questions. Admittedly there are candidates for license who should fail, but we hold that no one can tell whether a man should be failed or passed upon such a list of questions. Yet one member of the present Board of Veterinary Examiners is said to have filed a communication with the Board of Education of the state that he considered this list of questions fair and honorable, and presumably the member who submitted this list of questions and marked the papers felt that he had the power to do so.

This matter is presented with a view to calling the attention of the members of the society to this very important question of the selection of nominees for the new Board. If the members consider such a list of questions as a fair test of the ability of the candidate, those members of the Board who have a high regard for this list should be urged to remain upon the Board, and should be unanimously renominated by the society. If they consider that such a list of questions does not reflect credit upon the veterinary profession of the State of New York, then the



veterinary profession should look for a different type of men from which to make up its Board of Veterinary Examiners.

When the present Board was nominated there was an unfortunate declination upon the part of some prominent and able members to stand for nomination. If our profession in the State of New York is to maintain a reasonable degree of dignity and win the respect of the American veterinary profession at large, the leading members of the profession in the state should be ready to ignore any personal inconvenience of serving upon the Board, and permit the use of their names as candidates for nomination by the society. It is only by each member taking a thorough and intelligent interest in the question that the profession can hope to advance. If some of the actions of the past are frequently repeated in the future it will not be long until the State Board of Examiners will need to be wiped out of existence in order to protect the honor and good name of the profession of the Empire State.

W. L. WILLIAMS.

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*Editors* AMERICAN VETERINARY REVIEW.

It will be remembered by those who attended the recent International Congress on Tuberculosis at Washington, that in Section Seven, Professor J. F. Heymans, of Ghent, Belgium, gave an address on vaccination of cattle against tuberculosis,\* amplified by diagram on blackboard. The address was in German. A few days later I had the pleasure of Prof. Heymans' company, in which I learned more of his vaccination method; and since his return to Belgium, I have received a quantity of inoculation capsules together with a trocar and canula expressly used in making the vaccination, and some literature which explains his method; giving the mechanism and some logic on the physiologic action of the treatment.

Heymans' method transcends Behring's, in so far as the bacilli are not liberated in the circulation of the vaccinated animal, which in the latter's method has the disadvantage of a possible infection to the human being, by reaching the lungs through the circulation, and possible expulsion, by the animal in the stable, or on the clothing of daily attendants.

So far, the question of a practical method in the elimination of bovine tuberculosis in this country has not gained a satisfac-

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\*Appears elsewhere in this edition.

tory or substantial footing. Our present method goes round in a circle. It is not so important to know that the cattle of a certain district are tuberculous, as revealed by tuberculin tests, as it is to institute means which contend to prevent the propagation of the disease. The blow to be struck against the plague in cattle, is the inoculation of the animal soil with an antitubercular vaccine or serum, and the removal of physical causes which are constantly obstructing nature in her demand to maintain health and longevity.

To lose sight of these factors, and to continue to focus our attention on tuberculin as the sheet-anchor, is simply to prolong the struggle and maintain the stumbling-block.

On this view of the situation, I offer to the readers of the REVIEW this recent paper by Prof. Heymans, setting forth, in clear light, a suggestion which ultimately will solve the problem.

CLAUDE D. MORRIS.

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GOING to the dogs, at any rate, is no indication of degeneracy among fleas.

“CANINE SURGEON TO THE KING” is the peculiar title borne by the eminent veterinarian, Alfred Sewell, who has supreme medical charge of the innumerable dogs of Edward VII., of Queen Alexandra, and of the other members of the English royal family; and as a member of the household of the king and queen, he wears on state occasions a handsome gold-embroidered uniform. He cannot be regarded in the light of an ordinary “vet,” but rather as a specialist, and is summoned periodically to St. Petersburg and to Berlin for consultations with surgeons entrusted with the medical supervision of the canine pets of the czar, of the czarina, and of the kaiser. Sometimes, too, he is called to Vienna and to Paris, even to Madrid, for consultations, and on these occasions receives fees for his services which would make the mouth of any ordinary medical practitioner water with envy. Often he prescribes changes of air for his four-footed patients. In fact, this is one of his most favorite remedies, and he thinks nothing of ordering a valuable dog all the way from St. Petersburg to Nice, in charge of special attendants; and St. Bernards in a similar way from the south of England to Alpine resorts in Switzerland, with the object of restoring their tone by the bracing air of the mountains.—*Detroit News*, March 20.

## BIBLIOGRAPHY.

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"SPEZIELLE PATHOLOGIE UND THERAPIE DER HAUSTIERE," by Dr. Franz Hutyra, Professor of Contagious Diseases, and Dr. Josef Marek, Professor of Special Pathology and Therapy, in the Veterinary High School, Budapest. Second revised and enlarged edition. Two volumes, with 319 illustrations and six plates. Published by Gustav Fischer, Jena. Price, 44 M., bound, 48 M.

Through the success which greeted the appearance of the first edition of this admirable work and the rapid exhaustion of that issue, the authors felt compelled to prepare and publish a second edition, the latter appearing in little less than three years after the publication of the first. In this relatively short interim scientific investigation in medicine made such rapid strides and important data obtained as a result of careful research work that it became imperative to introduce into this edition new chapters, to revise and modernize the pathology and therapy of many diseases treated of in the previous edition, and, in general, to improve or supplement and amplify almost all the chapters. The new work is profusely illustrated, the number of illustrations having been increased from 270 to 319 and the number of plates from 3 to 6, the latter being highly instructive, representing stained specimens such as the negri bodies, blood preparations of lymphatic leukæmia, myelogenic leukæmia, trypanosoma equiperdum, cultures of bacteria (glanders, tuberculosis), and others. The chapters on new diseases are devoted to those of paratuberculosis, enteritis of cattle, enzootic pneumonia of young animals, infectious anæmia of the horse, various forms of nasal and oral inflammations, atony of the paunch, hyperidrosis, and seborrhœa. The chapter on tuberculosis is voluminous and exhaustive, covering 126 pages; the final pages of the article treating of the various reactions obtained with the brochemic agents, also the several methods dealing with the extinction of the disease. Glanders is treated of at similar length. An innovation, with reference to the literature on each subject, is to be found at the end of the article, where an indexed bibliography is inserted; this is considered as highly practical in value to the work. As the first edition was received with marked success it must certainly follow that the new edition will be thrice welcomed. It

will prove an excellent reference book to the practitioner of veterinary as well as of human medicine. For the student the work is clear and comprehensive. In brief, the work is a masterpiece on its subject, and we dare say that it is unexcelled by any other German publication of its nature.

Just as we are going to press with this review of the works of Hutyra and Marek, we learn, with much pleasure, that veterinarians who do not read German are soon to have the benefit of them in the form of an English edition from the pen of Prof. Chas. H. Higgins, of the Health of Animals Branch, Department of Agriculture, Ottawa, Canada. His publishers have been promised the first volume for September, 1909. The work is far more comprehensive than any in the English language and each statement has the author's name attached, making it a very handy book of reference.

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THE COWCATCHER.—While the visitor told how he had ridden thirty thrilling miles on the cowcatcher of a locomotive five-year-old Lorella listened attentively. As he concluded she asked, "Did you catch the cow, Mr. Blank?"—(*Chicago News*.)

STUNG.—"That man has no conscience."

"Why do you think so?"

"He cheated me fearfully in a horse trade in which I supposed I was easily getting the better end of the bargain."—(*Chicago Record-Herald*.)

A LIGHT DIET.—A certain father who is fond of putting his boys through natural history examinations is often surprised by their mental agility. He recently asked them to tell him "what animal is satisfied with the least nourishment."

"The moth!" one of them shouted confidently. "It eats nothing but holes."—(*Youth's Companion*.)

WHAT KILLED THE CAT?—Little Davey Sloan is forever asking questions.

"You'd better keep still or something will happen to you," his tired mother finally told him one night. "Curiosity once killed a cat, you know."

Davey was so impressed with this that he kept silent for three minutes. Then: "Say, mother, what was it the cat wanted to know?"—(*Everybody's Magazine*.)

## SOCIETY MEETINGS.

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### OHIO STATE VETERINARY MEDICAL ASSOCIATION.

ADDRESS OF PRESIDENT DR. H. FULSTOW, ANNUAL MEETING,  
COLUMBUS, JANUARY 12-13, 1909.

It affords me great pleasure to appear before you to-day to address this meeting. And I wish to express you my sincere thanks for the highest honor you have conferred upon me by electing me to preside over this body of learned veterinarians. It has been about fifteen years since I joined this association, and I have been proud of it ever since I became a member. Many changes have taken place, a good many old faces I do not see any more, but their places are continually being filled by new ones. The veterinary profession has made vast strides in the last twenty years, colleges which were then two years of about six months each, are now three years of from six to nine months. The entrance requirements at that time were simply the fee, but now in order to matriculate you must have a high school certificate of first class, or a college degree; or if you have none of these you must pass an examination which is the equivalent. Chemistry and bacteriology are more thoroughly studied. Meat and milk inspection and stock judging have been added, which are very necessary to the veterinarian who would be up-to-date. A good many farmers are taking agricultural courses, fitting themselves to cope with new and modern ways of farming, especially in the improvement of stock raising; they also get the course in stock judging, and are themselves just as capable of judging stock as the average veterinarian. The farmer of to-day is not the illiterate farmer of thirty or forty years ago, but he is an educated farmer. Many diseases which were very fatal are now cured by simple treatment. Milk fever, for instance. When I graduated, it was almost sure death, now by the use of oxygen we are able to save about 90%. Many new diseases are making their appearance in this country, although they are not new in the old world, such as foot and mouth disease, which made its appearance in the New England States in the winter of 1902-1903. It again made its appearance in New York, Pennsylvania, and Michigan this winter, but by the energetic and

efficient service of the Bureau of Animal Industry they have been able to prevent its further spread, although as far as I am able to learn, they have not been able to trace its origin in this last outbreak. Boards of health are beginning to realize the importance of the veterinarian as a sanitarian. No board of health is complete without one of its members a veterinarian. In my home town the board of health is composed of five members: there are two M. Ds, one veterinarian and two business men. When you stop to consider the many ways in which the veterinarian guards the public health, his value is immeasurable. There is nothing in the world that causes more diseases in the human family than impure milk, especially among children. He teaches his clients how to guard against disease, as well as assist nature in curing disease. I wish to suggest (and hope that it will be acted upon and carried out at this meeting), that a new order of business will be formulated for this and future meetings of this association, whereby all the executive business be transacted before the literary program be touched upon. Any part of the business or new business which may have been overlooked or may arise during the rendering of the literary program should be acted upon before the clinics are held. I believe we have outgrown the time allotted to our meetings; the sessions are too crowded for time, we have no more time than when the membership was only one-fourth that of to-day. One of two things exists, either we are woefully non-progressive or do ourselves and the profession great injustice. I think one more day added will meet with approval. It is not my desire or intention to extend this address to a tedious length. We have our business and literary program and the clinics, and our time is all too short for these things. So with this I bid you welcome to this the twenty-sixth annual meeting of this association, and hope that it may prove one of the most profitable in its history.

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## YORK COUNTY VETERINARY MEDICAL ASSOCIATION.

The regular quarterly meeting of the York County Veterinary Medical Association was held June 16, 1909, in the National Hotel. A large number of city and county veterinarians were in attendance. The meeting was featured with short talks by Dr. E. S. Bausticker, secretary of the society. His course of

remarks included practical cases he came in touch with since the last meeting. They were "Induration, or Hardening of an Inverted Horn of the Uterus of a Cow and Its Amputation" and "A Case of Volvulus or Twisted Bowel in a Horse." Azoturia in horses and milk fever in cows and the best treatment for the same were discussed in full by the members present. The next meeting of the society will be held on Tuesday afternoon, September 7, in this city.

AN INSTANCE.—Hewitt—I was once kicked by a donkey. Jewett—We often hear of people kicking themselves.—(*New York Press.*)

THE BARGAIN.—"You ought to take this horse," said the dealer. "He's a bargain."

"Well, then, I don't want him," said the customer. "I want something to drive, and I never could drive a bargain."

THE CONSULTATION.—Friend—You've never been called in consultation, have you? Young Doctor—No, but I'd like to be. It's nice to charge ten times as much as the other doctor for saying that you don't know any more about the case than he does.—(*Puck.*)

ENJOYED IT.—"Look at that Boston girl at the phonograph. She is actually smiling." "Yes, she is listening to Prof. Beacon's delightful dissertation on the 'Fungous Diseases That Attack the Larvae of the Brown Tail Moth.'"—(*Cleveland Plain Dealer.*)

THE State Board of Veterinary Medical Examiners of Tennessee, which was recently appointed by the Governor, met in Nashville on June 9 and organized, with the following result:

Dr. Geo. R. White, President, Nashville, Examiner in Veterinary Anatomy and Veterinary Surgery; Dr. M. Jacob, Secretary, Knoxville, Examiner in Veterinary Physiology and Veterinary Pathology; Dr. J. W. Scheibler, Vice-President, Memphis, Examiner in Veterinary Practice and Veterinary Materia Medica; Dr. A. C. Topmiller, Treasurer, Murfreesboro, Examiner in Veterinary Obstetrics and Chemistry.

At this meeting certificates of permanent license were issued to Drs. Frank R. Yourre, McKillip, '09; W. L. Gates, Ontario Veterinary College, '08; Chas. L. Lumby, McKillip, '05, and A. T. Leach, McKillip, '09.

## NEW LAWS ENACTED.

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### NEW TUBERCULIN LAW.

CHAPTER 588.—An Act to amend the agricultural law, in relation to tuberculin, issuing certificates relative to tuberculin tested cattle and the branding of tuberculous cattle.

Became a law May 29, 1909, with the approval of the Governor. Passed, three-fifths being present.

*The People of the State of New York, represented in Senate and Assembly, do enact as follows:*

Section 1. Chapter nine of the laws of nineteen hundred and nine, entitled "An act in relation to agriculture, constituting chapter one of the consolidated laws," is hereby amended by adding thereto a new section, to be known as section sixty-four-a, to read as follows:

Sec. 64-a. *Tuberculin, issuing certificates relative to tuberculin tested cattle, branding of tuberculous animals.*—Any person using or injecting tuberculin into bovine animals for the purpose of determining whether they are affected with the disease known as tuberculosis, shall take the temperatures of such animals before, during and after such injections, according to the most approved methods, shall keep a correct record of such temperatures so taken and shall send a report within one week thereafter to the commissioner of agriculture giving a detailed account of the tests thus made, including the description of animals, the location of the farm or farms upon which tests were made and the name and address of the owner or custodian, and such other information concerning the use of tuberculin as may be called for by the commissioner of agriculture. A report of each such test so made shall be accompanied by a statement of the owner or person in charge giving the date upon which the said animals were last tested, if at all, and if known, with tuberculin, and the name and address of the person or persons making such test. If no such test has been made within four weeks, or if the animals were not treated in any manner for the purpose of preventing their normal reaction to tuberculin, then the report shall be accompanied by a statement setting forth such facts and the said



statement shall be duly verified by the person making such statement. No person shall give a certificate showing or tending to show that an animal has been tested and found not affected with tuberculosis, unless the character of such test is stated and it was made in a proper way, and unless such animals failed to give a typical reaction. Any bovine animal in which tuberculosis is clearly diagnosed by a physical examination or a tuberculin test, or both, shall be branded upon the forehead or upon the right side of the neck from six to ten inches back of the jaw bone with a capital "T" not less than two inches high, one and one-half inches wide, with mark one-fourth of an inch wide; such branding shall not be construed as cruelty to animals within the meaning of the penal law; however, any animal which has reacted to the tuberculin test and appears physically sound may be retained for breeding or dairy purposes without such branding, provided a full description of such animal, sufficient for its identification and satisfactory to the commissioner of agriculture, is furnished to the commissioner of agriculture and a permit from said commissioner is issued for keeping such animal in such manner. Such permit shall not be issued except upon the condition that the animal will thereafter be kept in a proper manner with regard to the protection of the public health and the health of other animals, and no such animal shall be sold or removed from the premises without written permission from the commissioner of agriculture, and all such animals shall be accounted for by the owner or custodian whenever called upon by the commissioner of agriculture to do so. All tuberculin sold, given away or used within this state, shall bear a label stating the name and address of the person or firm or institution making it and the date of preparation. All persons selling or giving away tuberculin shall report to the commissioner of agriculture the amount of tuberculin sold or given away, the degree of strength, the name and address of the person to whom sold or given and the date of delivery; said report shall include the address of and be signed by the person making it. Persons buying or procuring tuberculin shall not use or dispose of it until assured in writing by the person from whom the tuberculin is received that its delivery to said person has been reported to the commissioner of agriculture or unless they have themselves reported its receipt to the commissioner of agriculture with information required to be furnished by those who distribute tuberculin, and such persons buying or procuring tuberculin shall keep a correct record of

the amount received, the amount used and the amount on hand and shall report these facts whenever any tuberculin is used, and if at any time tuberculin left on hand is not deemed fit for use or is not to be used, the said person shall forward the same to the commissioner of agriculture with a statement of where and when procured, the amount procured at the time, the amount of it that was used, and his name and address. If the amount forwarded to the commissioner of agriculture and the amount used does not total the amount procured or purchased a statement shall be made as to what became of the remainder. No person or persons shall treat any bovine animal with any material or substance nor in any manner for the purpose of preventing a normal reaction on the part of such animal to the tuberculin test. No person shall knowingly sell or offer for sale any animal that has reacted to the tuberculin test, without giving information of such reaction to the purchaser. No animal that has reacted to the tuberculin test shall be sold or removed from the premises where the test was made without permission in writing from the commissioner of agriculture. Any veterinary surgeon violating any of the provisions of this section shall, in addition to the penalties and fines prescribed in the agricultural law, forfeit his certificate to practice and thereafter be debarred from practicing his profession within the state of New York until such disability is legally removed.

Sec. 2. This act shall take effect immediately.

State of New York, }  
Office of the Secretary of State, } ss.:

I have compared the preceding with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom and of the whole of said original law.

SAMUEL S. KOENIG,  
*Secretary of State.*

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## STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS—JANUARY SESSION, 1909—PUBLIC LAWS.

CHAPTER 385.—An Act Creating a State Board of Veterinarians and Regulating the Practice of Veterinary Medicine, Surgery, and Dentistry—Passed April 8, 1909.

*It is enacted by the General Assembly as follows:*

Section 1. There shall be a state board of veterinarians consisting of five members. At the January session of the general assembly, A. D. 1909, the governor, with the advice and consent of the senate, shall appoint one member of said board to hold office until the first day of February, A. D. 1910; one member to hold office until the first day of February, A. D. 1911; one member to hold office until the first day of February, A. D. 1912; one member to hold office until the first day of February, A. D. 1913; and one member to hold office until the first day of February, A. D. 1914. Thereafter at the January session of the general assembly in each year the governor shall, with the advice and consent of the senate, appoint one member of said board, to hold office until the first day of February in the fifth year after his appointment, to succeed the member of said board whose term expires. Any vacancy which may occur in said board when the senate is not in session shall be filled by the governor until the next session thereof, when he shall, with the advice and consent of the senate, appoint some person to fill such vacancy for the remainder of the term. The persons eligible to appointment on said board shall be veterinarians who are graduates of some reputable school of veterinary medicine, surgery, and dentistry of a standard recognized by the Rhode Island Veterinary Medical Association, and who shall have been actually engaged in practice as veterinarians in the state of Rhode Island for at least five years next prior to their appointment.

Sec. 2. The members of said board shall organize annually, on the second Tuesday in February in each year, by the election of a chairman, treasurer, and secretary, who shall hold their offices for one year. Three members shall constitute a quorum for all purposes. Said board shall hold regular meetings on the second Tuesday in June and the second Tuesday in February in each year, and such special meetings, and at such times and places, as they may determine. Said board shall make by-laws and rules, not inconsistent with law, as are necessary to carry out the provisions of this act. The first organization of said board after appointment under this act shall be made within thirty days of its passage.

Sec. 3. Every person engaged in the practice of veterinary medicine, surgery, and dentistry in this state shall, on or before the first Monday in June, A. D. 1909, register with said board: *Provided*, he has been in active practice in said profession for

three years, or more, next prior to the date of the passage of this act; and the fee for said registration shall be five dollars, to be paid to said board with the application. The board shall furnish a suitable certificate of said registration. Regularly each year thereafter, in the month of June, a renewal certificate shall be granted, and the fee for each renewal shall be one dollar. Three years of active practice in the state of Rhode Island shall be essentials of registration under this section. It shall be the duty of the state board of veterinarians to pass upon all diplomas to be exhibited at the office, or place of business, or other public place, by an applicant for registration under the provisions of this act. And the continued use or exhibition of a diploma objected to by vote of this board, after notice in writing and an opportunity to be heard before said board, shall be deemed sufficient reason for said board to revoke the certificate of registration in such case.

Sec. 4. Any person not entitled to registration under section three of this act, who has attained the age of twenty-one years and is a graduate of a regular veterinary, medical, surgical, and dental school or college of a standard recognized by the Rhode Island Veterinary Medical Association, may apply to said board for examination with reference to his skill and knowledge of veterinary medicine, surgery, and dentistry, and be so examined at reasonable times, to be determined by said board. Any person passing an examination satisfactory to said board shall be furnished with a certificate to that effect: *Provided*, that prior to said examination, he has paid a fee of ten dollars to the secretary of said board. None of the provisions of this act shall in any way apply to veterinarians in the service of the United States government in this state. Subjects of examination shall be: veterinary anatomy, chemistry, physiology, obstetrics, pathology, therapeutics, materia medica, contagious diseases, and theory and practice of veterinary medicine, surgery, and dentistry, or any kindred subject which applies to veterinary science.

Sec. 5. The fee for examination, as stated in section four, shall in no case be returned to the applicant if he fails to pass, but shall be applied to the expenses of the board. An applicant who fails to pass the first examination may at a later date, upon the payment of five dollars, be allowed to take a second examination. All subsequent examinations shall be given at times satisfactory to the board, and a fee of five dollars shall accompany the applications for the same. All examination fees received under

this act shall be used towards defraying the expenses of this board. The actual expense of said board shall be paid out of the funds received from applicants for examination and registration: *Provided*, that in no event shall such expenses be a charge against the state. After all necessary expenses of said board have been paid by the treasurer thereof out of the moneys received by it from said fees, including five dollars for each day's actual attendance to each member of said board, and three cents a mile for mileage, if there be funds for that purpose, the balance of the moneys received by it from said fees under this act shall be paid to the general treasurer. No money shall be applied to the payment of the expenses of said board for said compensation except that received from said fees as aforesaid.

Sec. 6. Said board annually shall present to the general assembly, in the month of January, a detailed statement of the receipts and disbursements of said board during the preceding year, with a statement of its acts and proceedings, and such recommendations as said board may deem proper.

Sec. 7. Any person who, not being then lawfully authorized to practice veterinary medicine, surgery, and dentistry within this state, and so registered according to law, shall practice veterinary medicine, surgery, and dentistry, or any of its branches, after having received, or with the expectation of receiving, therefor, either directly or indirectly, any bonus, gift, or compensation, or who shall open an office with intent to practice, or who shall hold himself out to the public as a practitioner of, veterinary medicine, surgery, and dentistry, whether by appending to his name the title of doctor, or any abbreviation thereof, or V. S., or any other title or designation implying a practitioner of veterinary medicine, surgery, and dentistry, or in any other way, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not exceeding fifty dollars, and upon each and every subsequent conviction shall be fined not exceeding one hundred dollars or be imprisoned not exceeding thirty days, or be both fined and imprisoned.

Sec. 8. Complaints for the violation of the provisions of this act may be made by any person, and if made by a member of said board, said member shall be exempt from giving surety for costs on any complaint made as aforesaid.

Sec. 9. The provisions of this act shall not be construed to prohibit advice or service by a person not entitled to practice veterinary medicine, surgery, and dentistry under the provisions

of this act: *Provided*, he does not hold himself out as a practitioner within the meaning and intent of this act.

Sec. 10. The board may, after due notice and hearing, in its discretion, refuse to grant the certificate provided for in section four of this act to any veterinarian who has violated any of the laws of this state, or who has been guilty of gross unprofessional conduct or conduct of a character likely to deceive or defraud the public; and may, after due notice and hearing, revoke any certificate, issued or granted by it heretofore, for like cause or for any fraud or deception committed in obtaining said certificate, or for any other cause which, in the opinion of said board, shall render the holder of such certificate an unfit person to practice veterinary medicine, surgery, and dentistry in this state. Any person aggrieved by any decision or ruling of said board may, within ten days after receiving said notice, exclusive of Sundays and legal holidays, take an appeal therefrom to the superior court sitting at Providence, or the superior court sitting in the county in which said person may dwell, and shall file therein his reasons of appeal, and serve a copy thereof on the secretary of said board. And said superior court shall, as soon as may be, hear and determine said appeal.

Sec. 11. This act shall take effect on and after its passage, and all acts and parts of acts inconsistent herewith are hereby repealed.

A true copy.

Attest:

CHARLES P. BENNETT,  
*Secretary of State.*

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JUNE 2, 1909, AMERICAN VETERINARY REVIEW, New York. Gentlemen: Enclosed find P. O. for three dollars to one year's subscription to AMERICAN VETERINARY REVIEW. I have been a subscriber for the past seventeen years and must acknowledge the REVIEW is one of the most welcome visitors to my office. Yours very truly, R. S. Heer, Platteville, Wis.

THE VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY will celebrate its twenty-fifth anniversary, July 15 and 16, at Atlantic City. The meetings of this association are always interesting and instructive, but the occasion, and the place of meeting (as Secretary Lowe has poetically phrased it), at America's famous Mecca-by-the-sea, makes this occasion doubly attractive.

## NEWS AND ITEMS.

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DR. AND MRS. W. H. H. VARNEY announce the marriage of their daughter May Phila to Dr. Frank Wilbut Chamberlain on Wednesday, June 16, 1909, at East Charlotte, Vt.

DR. J. F. DE VINE, Acting Chief Veterinarian for the New York State Department of Agriculture, delivered an address before the Cayuga County Medical Society, at the Masonic Temple, Auburn, N. Y., June 17, on "Rabies."

DR. B. F. KAUPP, of Fort Collins, Colorado, left there about the middle of June to attend the Omaha meeting, thence to Chicago, where he will devote six weeks to the study of special pathology and experimental work at the Chicago University.

### DEGREES OF SENSE.

There's fine sense and coarse sense,  
Each good in its way,  
But the man who has horse sense  
Knows when to say neigh.

STANDARDIZATION OF DISINFECTANTS.—A movement is on foot to bring about the standardization of disinfectants in this country. Carbolic acid crystals is to be the standard. The efficiency of materials composing disinfectants, by thus demonstrating their comparative value to this standard, will be rated; so that purchasers of disinfectants may be in a position to know just how much disinfectant they are buying, and the surgeon how much he is using, when employing a standardized disinfectant.

A CORNELL MAN GREATLY HONORED.—Dr. Winfred B. Mack, who soon after his graduation from the New York State Veterinary College became Professor of Bacteriology at the University of Nevada, has recently been appointed State Bacteriologist of that commonwealth. A part of his work will consist in diagnosing infectious diseases for the benefit of the health officers and physicians of the State. He has also been elected a member of the Reno Board of Health at a recent meeting of the City Council. We wish the doctor all the success he so well deserves.

DR. LEONARD PEARSON AND HIS MOTHER CONVALESCENT.—Those friends of Dr. Leonard Pearson, of Philadelphia, who chanced to read in the newspapers of the accidental asphyxiation of himself and his mother by illuminating gas, on June 9th, will be pleased to learn that they are both doing very well and regaining their usual physical condition. That they had a close call is certain; especially Mrs. Pearson, in whose case it was necessary to resort to blood transfusion. Dr. C. J. Marshall promptly offered his blood to be drawn. Connection was made at the wrists and blood flowed from Dr. Marshall's body into that of Mrs. Pearson for forty-five minutes; at the same time about sixteen ounces of devitalized blood was being drawn from Mrs. Pearson's opposite wrist. This noble act on the part of Dr. Marshall is characteristic of him, as all who have the honor of his acquaintance know. Oxygen restored Dr. Pearson to consciousness late on Wednesday, and Mrs. Pearson became conscious Thursday morning, the accident having occurred about daybreak on Wednesday.

WE are indebted to Dr. Jas. F. Ryder, Inspector in charge at the port of Boston, for the following authentic account of the horrible affair that took place in the packing houses at Somerville, Mass., on June 5 last: "Yours of the 7th at hand. The affair mentioned happened at just 2 P. M. on June 5 at the North Packing & Provision Co., Somerville, Mass. Hogs were being killed at the rate of 560 per hour. John Murphy, whose work consists of cutting the hogs' heads nearly off, exposing the cervical glands so that the inspector can see them, was at work on the moving table; next to him stood Dr. Daniel S. Hays (Harvard), Government Inspector. Dr. Hays was bending over a hog when Murphy suddenly drew his 10-inch knife across the back of Dr. Hays' neck, exposing the cervical vertebrae. Dr. Hays turned, and then Murphy plunged the knife in the left side of the abdomen and turned the knife. The intestine was completely severed in one place and hacked in others. About six inches of omentum protruded from the wound. At the hospital about six inches of intestine was removed and the ends brought together by the use of the Murphy button. Dr. Hays rallied well and to-day (June 8) the surgeon informs me he has about an even chance for recovery. After attacking Dr. Hays, he (Murphy) rushed from floor to floor stabbing anyone he met. Five men were killed and four badly injured. Dr. Fred Saunders (A. V. C.), Vet.



Inspector, had a very narrow escape. Murphy was within a few yards of him before the doctor saw him, but managed to get in a cooler and pull the door shut. Murphy was captured in the cellar, a raving maniac."

### SANE HANDLING OF TUBERCULOSIS.

APROPOS of what has been said editorially on this subject in this issue of the REVIEW, we reproduce the following from *The Breeder's Gazette* of June 16, 1909:

"The tuberculin test is to be investigated as to its usefulness by an Illinois legislative committee with \$10,000 at its disposal. The bill providing for this work was sanctioned by the Governor's signature, June 10. The operation of the tuberculin test, the conditions under which it is a successful means of diagnosis and the possible abuses which make it a farce, are well known. An expenditure of \$10,000 to investigate it is money burned. Time has proved that the tuberculin test applied to cattle that are not excited, overheated or near parturition, or suffering from the effects of other sickness, or hardships or shipment, is a very accurate means of indicating the presence or absence of tuberculosis, provided the animals have not at a recent previous time received injections of tuberculin.

Tuberculin trusted to the hands of unscrupulous persons can be used to vitiate completely the results from this otherwise reliable test. All cattlemen should know that at present the value of the test depends on the honesty of the owner of the cattle. Blind reliance on a certificate of test without knowledge of the previous owner is folly. If the tuberculin test is to mean anything in general use among men of all degrees of honesty none but reputable officials should be permitted to handle it. Its manufacture, sale and application must be hedged about with such strict supervision that its fraudulent use will be impossible. Tuberculin, like whiskey, can be made by moonshine and it will be no simple mandatory law that will effectually safeguard it. Vigilant inspection will be necessary.

The cattle interests of the country are sorely in need of intelligent action on this question. Some senseless laws requiring wholesale precipitate slaughter of tubercular cattle have driven owners to seek some means of protection. The trend of legislative thought is pointing more and more strongly to the extension of drastic laws in states harboring the greatest cattle in-

terests. Strange as it may seem there is still suggestion of the "kill all" policy—to kill all reacting cows. It would be a sad day if any legislature should so far forego sanity as to enact such a statute. It would mean a shotgun reception to the pole-tax inspectors—a state of real anarchy. There must be more of fact and less of hypothesis before such a policy can be adopted in the name of public health. Experience has abundantly proved that by the Bang method of segregation employed in Denmark, tuberculous cows can be allowed an extended career of usefulness with less financial loss to the owner than if their infection had not been discovered.

To prevent dealers juggling with tuberculous cattle an official brand on all reacting animals would be effective. When tuberculosis once is firmly lodged in the system the animal's health is always open to suspicion so the brand would work no injustice. The branding iron applied to tuberculous cattle would give them a non-transferable identification that would be always legible and carry its own warning.

The problem is primarily one for the cattle grower, not the state. As a matter of self-protection on a dollars and cents basis each cattle owner should ascertain what animals in his herd if any, carry the disease, and then make the most sensible disposition of them. If valuable for reproduction they should be segregated; if not valuable enough for such treatment they should be sent to slaughter. If the state attempts to enforce on the farmer measures which he should take in self-protection, it should be a rational regulation with decent respect for property rights of farmers as well as protection to buyers of cattle at private and public sales. The control of the tuberculin test by government officials and the branding, not the compulsory slaughter, of reacting animals is the first logical step in dealing officially with the problem. Such initial steps followed by conservative regulation of the sale of reacting cattle will give quicker and more equitable results than attempts at radical legislation looking to the confiscation of the condemned property. Farmers in their own interest should hasten the eradication and prevent the spread of tuberculosis so far as possible. Conservative official aid can help them in the fight."

THE ORIGIN OF THE RECENT OUTBREAK OF FOOT AND MOUTH DISEASE IN THE UNITED STATES, is the title of circular 147 issued June 16, 1909, by the U. S. Department of Agri-

culture, through the Bureau of Animal Industry, and traces the disease from the point of outbreak in Pennsylvania on November 10, 1908, through New York, Maryland, Michigan, finally to calves that had been used for vaccine by a Detroit establishment. The fact that the cases of longest standing were found among these calves, caused Secretary of Agriculture James Wilson and Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, to suspect that the vaccine was contaminated with the virus of foot-and-mouth disease. As the United States Public Health and Marine Hospital Service was charged by the law with the supervision of biological products used in human medicine, that service was requested to join the Bureau of Animal Industry in making an investigation.

The main facts as brought out in the report show that certain smallpox vaccine virus was imported by an eastern firm, which was contaminated with the infection of foot-and-mouth disease, and that in May, 1908, the western firm procured some vaccine of this strain. Calves used by the latter firm in propagating vaccine, were sent October 16th to the Detroit stock yards and thence on the same day to a farm near Detroit. On October 20th three carloads of cattle from points in Michigan reached the Detroit stock yards and were put into the pens that had been occupied by the vaccine calves four days previously. Some of these cattle were sold for slaughter at Detroit, while the remainder were shipped to Buffalo, and some were reshipped to Danville and Watsonstown, Pa., where the disease was first observed some days later. The disease spread to various places in Pennsylvania and New York and to one locality in Maryland.

Three separate series of experiments were made by Doctors Mohler and Rosenau. Young cattle and sheep were inoculated with vaccine virus obtained from both firms. Foot-and-mouth disease was produced in experimental animals by the use of vaccine of the same strain obtained from both sources, while other strains of vaccine tested gave negative results. The disease was also transmitted from one animal to another through several series, in two instances by natural modes of infection.

The investigation also indicates that the outbreaks of foot-and-mouth disease in New England in 1902-3 were probably due to contaminated vaccine of Japanese origin from the eastern firm. While an investigation was made at that time, the results were confusing, so that it was not definitely determined that the outbreaks were due to contaminated vaccine virus. In the recent investigation by Doctors Mohler and Rosenau, however, they

used animals which had been vaccinated and were therefore immune to vaccinia or cowpox, so that in case the infection of foot-and-mouth disease was present in the vaccine under suspicion the lesions of that disease would not be suppressed or obscured by those of vaccinia. By this method and by means of intravenous inoculation they were able to detect the contaminating infection when it might not otherwise have been discovered.

The fact that the infection was present in the vaccine virus of the eastern firm for so long a period, but was not transmitted to outside cattle, was doubtless due to this firm's practice of killing its calves after taking the vaccine virus. The western firm, on the other hand, rented their calves and placed them again on the market a short time after the vaccine material was taken. In this way the disease spread from the vaccine stables of the western firm, but not from those of the eastern firm, although it was the vaccine virus from the latter establishment that infected the former's cattle.

According to Doctors Mohler and Rosenau, foot-and-mouth disease is primarily and principally a disease of cattle, and affects man only secondarily and casually. Children are occasionally infected by drinking unboiled milk during the periods in which the disease is prevalent in the neighborhood, while persons in charge of diseased animals may become infected through contact with the diseased parts or by milking, slaughtering, or caring for the animals. The disease when communicated to man, however, is very seldom fatal, the affection usually being too slight to come to the notice of the family physician.

As soon as the facts regarding the contamination of vaccine became known the licenses of the two firms involved were at once suspended, all the suspected vaccine virus on hand was destroyed and that upon the market withdrawn, and other measures of a radical nature were taken. The report commends the intelligent and prompt co-operation of these two great firms in accomplishing this end. After an examination of every strain of vaccine upon the market it is stated that there is now upon the market no vaccine contaminated with the virus of foot-and-mouth disease. Regulations have been formulated with a view to preventing hereafter the propagation of contaminated vaccine virus. No instance of the transmission of foot-and-mouth disease to man through vaccine virus has been recorded, and it is considered doubtful, in view of the tests made, if it is possible to reproduce the disease in man by the cutaneous inoculation commonly used in the process of vaccination.

## VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

| Name of Organization.                                   | Date of Next Meeting.          | Place of Meeting.            | Name and Address Secretary.      |
|---------------------------------------------------------|--------------------------------|------------------------------|----------------------------------|
| Alumni Ass'n, N. Y.-A. V. C. ....                       | .....                          | 141 W. 54th St. Chicago..... | L. L. Glynn, N. Y. City.         |
| American V. M. Ass'n.....                               | Sept. 7-10, 1909.              | Chicago.....                 | R. P. Lyman, Hartford, Conn.     |
| Arkansas Veterinary Ass'n.....                          | .....                          | .....                        | Horace E. Rice, Little Rock.     |
| Ass'n Médéciale Veterinaire Française "Laval".....      | 1st and 3d Thur. of each month | Lec. Room, Laval Un'y, Mon.  | J. P. A. Houde, Montreal.        |
| B. A. I. Vet. In. A., Chicago.....                      | 2d Fri. ea. mo.                | San Francisco.               | D. D. Tierney, Chicago, Ill.     |
| California State V. M. Ass'n.....                       | .....                          | Ottawa                       | J. J. Hogarty, Oakland.          |
| Central Canada V. Ass'n.....                            | .....                          | Chicago                      | A. E. James, Ottawa.             |
| Chicago Veterinary Society.....                         | 2d Tues. ea. mo.               | Denver                       | J. M. Parks, Chicago.            |
| Colorado State V. M. Ass'n.....                         | June, 1909.....                | New Haven                    | M. J. Woodliffe, Denver.         |
| Connecticut V. M. Ass'n.....                            | .....                          | Rochester.....               | B. K. Dow, Willimantic.          |
| Genesee Valley V. M. Ass'n.....                         | .....                          | Athens.....                  | J. H. Taylor, Henrietta.         |
| Georgia State V. M. A.....                              | Nov. 16-17, 1909.              | Bloomington.                 | P. F. Bahnsen, Americus.         |
| Hamilton Co. (Ohio) V. A.....                           | .....                          | Louisville.....              | Louis P. Cook, Cincinnati.       |
| Illinois State V. M. Ass'n.....                         | July 13, 1909.....             | Indianapolis.                | J. H. Crawford, Harvard.         |
| Illinois V. M. and Surg. A.....                         | Jan. and Aug.                  | Ft. Dodge                    | W. A. Swain, Mt. Pulaski.        |
| Indiana Veterinary Association.....                     | January, 1910                  | Topeka                       | E. M. Bronson, Indianapolis.     |
| Iowa Veterinary Ass'n.....                              | .....                          | Not decided                  | H. C. Simpson, Denison.          |
| Kansas State V. M. Ass'n.....                           | .....                          | Philadelphia.                | B. Rogers, Manhattan.            |
| Kentucky V. M. Ass'n.....                               | Monthly.....                   | Portland                     | D. A. Piatt, Lexington.          |
| Keystone V. M. Ass'n.....                               | .....                          | Baltimore.....               | S. Lockett, Glenolden.           |
| Louisiana State V. M. Ass'n.....                        | July 14, 1909.....             | Boston.....                  | E. P. Flower, Baton Rouge.       |
| Maine Vet. Med. Ass'n.....                              | .....                          | Saginaw                      | A. Joly, Waterville.             |
| Maryland State Vet. Society.....                        | Monthly.....                   | Stillwater                   | H. H. Counselman, Sec'y.         |
| Massachusetts Vet. Ass'n.....                           | Jan. 25-26, 1910.              | Omaha.....                   | Wm. T. White, Newtonville.       |
| Michigan State V. M. Ass'n.....                         | July 14-15                     | St. Joseph.....              | Judson Black, Richmond.          |
| Minnesota State V. M. Ass'n.....                        | .....                          | Helena.....                  | G. Ed. Leech, Winona.            |
| Mississippi State V. M. Ass'n.....                      | June 16-17, 1909.              | Grand Island.                | J. C. Robert, Agricultural Col.  |
| Missouri Valley V. Ass'n.....                           | .....                          | Ithaca.....                  | B. F. Kaupp, Fort Collins, Colo. |
| Missouri Vet. Med. Ass'n.....                           | .....                          | Wilmington                   | F. F. Brown, Kansas City.        |
| Montana State V. M. A.....                              | Aug. 25, 26, 27.               | Fargo                        | W. S. Swank, Miles City.         |
| Nebraska V. M. Ass'n.....                               | July 2, 3.....                 | Columbus.....                | H. Jensen, Weeping Water.        |
| New York S. V. M. Soc'y.....                            | Call of Sec'y.....             | Paterson, N. J.              | J. F. De Vine, Goshen.           |
| North Carolina V. M. Ass'n.....                         | .....                          | Philadelphia.                | Adam Fisher, Charlotte.          |
| North Dakota V. M. Ass'n.....                           | .....                          | Mon. and Que.                | C. H. Martin, Valley City.       |
| Ohio State V. M. Ass'n.....                             | Jan. and June.....             | Providence                   | Sidney D. Myers, Wilmington      |
| Oklahoma V. M. Ass'n.....                               | 1st Wed. fol. the              | St. Louis.....               | W. H. Martin, El Reno.           |
| Ontario Vet. Ass'n.....                                 | 2d Sun. ea. mo.                | Reading.....                 | C. H. Sweetapple, Toronto.       |
| Passaic Co. V. M. Ass'n.....                            | June 16, 1909.....             | Philadelphia.                | H. K. Berry, Paterson, N. J.     |
| Pennsylvania State V. M. A.....                         | June, 1909.....                | Sioux Falls.....             | F. H. Schneider, Philadelphia.   |
| Philippine V. M. A.....                                 | 2d Tues. in Jy. '09            | Los Angeles.....             | Chas. G. Thomson, Manila.        |
| Province of Quebec V. M. A.....                         | Jan. Apl. Jy. Oct.             | 407 Ill. Ave.....            | Gustave Boyer, Rigand, P. Q.     |
| Rhode Island V. M. Ass'n.....                           | 4th Tues. ea. mo.              | St. P.-Minneap               | J. S. Pollard, Providence.       |
| St. Louis Soc. of Vet. Inspectors.                      | Call of Chair.....             | St. Louis.....               | Wm. T. Conway, St. Louis, Mo.    |
| Schuykill Valley V. M. A.....                           | Sept.....                      | Reading.....                 | W. G. Huyett, Wernersville.      |
| Soc. Vet. Alumni Univ. Penn.....                        | .....                          | Philadelphia.                | B. T. Woodward, Wash'n, D. C.    |
| South Dakota V. M. A.....                               | .....                          | Sioux Falls.....             | J. A. Graham, Sioux Falls.       |
| Southern Auxiliary of California State V. M. Ass'n..... | Jan. Apl. Jy. Oct.             | Los Angeles.....             | J. A. Edmonds, Los Angeles.      |
| So. St. Joseph Ass'n of Vet. Insp.....                  | 4th Tues. ea. mo.              | 407 Ill. Ave.....            | H. R. Collins, So. St. Joseph.   |
| Texas V. M. Ass'n.....                                  | Call Exec. Com.                | St. P.-Minneap               | R. P. Marsteller, College Sta.   |
| Twin City V. M. Ass'n.....                              | 2d Thu. ea. mo.                | St. P.-Minneap               | S. H. Ward, St. Paul, Minn.      |
| Vermont Vet. Med. Ass'n.....                            | July.....                      | Reading.....                 | F. W. Chamberlain, Burlington    |
| Veterinary Ass'n of Alberta.....                        | .....                          | Sioux Falls.....             | C. H. H. Sweetapple, For.        |
| Vet. Ass'n Dist. of Columbia.....                       | 3d Wed. ea. mo.,               | 514-9th St., N. W.....       | Saskatchewan, Alta., Can.        |
| Vet. Ass'n of Manitoba.....                             | Not stated.....                | Winnipeg.....                | M. Page Smith, Wash., D. C.      |
| Vet. Med. Ass'n of N. J.....                            | July 14-15, 1909.              | Atlantic City.               | F. Torrance, Winnipeg.           |
| V. M. Ass'n, New York City.....                         | 1st Wed. ea. mo.               | 141 W. 54th St.              | W. Herbert Lowe, Paterson.       |
| Veterinary Practitioners' Club.....                     | Monthly.....                   | Jersey City                  | W. Reid Blair, N. Y. City.       |
| Virginia State V. M. Ass'n.....                         | July 9, 1909.....              | Hampton                      | A. F. Mount, Jersey City.        |
| Washington State Col. V. M. A.....                      | 1st & 3d Fri. Eve.             | Pullman.....                 | W. G. Chrisman, Charlo'sv'le.    |
| Washington State V. M. A.....                           | .....                          | Seattle.....                 | R. G. McAlister, Pullman.        |
| Western Penn. V. M. Ass'n.....                          | 1st Wed. ea. mo.               | Pittsburgh.....              | J. T. Seely, Seattle.            |
| Wisconsin Soc. Vet. Grad.....                           | July 13-14, 1909.              | Grand Rapids.                | F. Weitzell, Allegheny.          |
| York Co. (Pa.) V. M. A.....                             | Sept. 7, 1909.....             | York, Pa.....                | J. P. West, Madison.             |
|                                                         |                                |                              | E. S. Bausticker, York, Pa.      |

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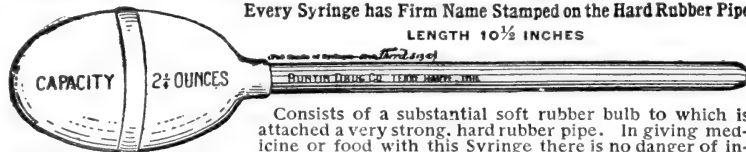
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| 100 | Aconitine, Crystals.....                                                   | 1-20 gr.               | 15                         |
| 116 | Aconitine, Crystals.....                                                   | 1-10 gr.               | 17                         |
| 117 | Aconitine, Crystals.....                                                   | 1-6 gr.                | 22                         |
| 118 | Aconitine, Crystals.....                                                   | 1-4 gr.                | 27                         |
| 161 | Arecoline, Hydrobrom—Declined.....                                         | $\frac{1}{4}$ gr.      | 50                         |
| 159 | Arecoline, Hydrobrom—Declined.....                                         | $\frac{1}{2}$ gr.      | 80                         |
| 160 | Arecoline, Hydrobrom—Declined.....                                         | 1 gr.                  | 150                        |
| 101 | Atropine Sulphate.....                                                     | 1-4 gr.                | 12                         |
| 121 | Atropine Sulphate.....                                                     | 1-2 gr.                | 15                         |
| 121 | Atropine Sulphate.....                                                     | 1 gr.                  | 30                         |
| 158 | Barium Chloride Comp (Ellis).....                                          |                        | 15                         |
|     | { Barium Chlor.....                                                        | 7 grs. }               |                            |
|     | { Digitaline.....                                                          | 1-12 gr. }             |                            |
| 152 | Cardiac Tonic.....                                                         |                        | 20                         |
|     | { Digitaline, Pure.....                                                    | 1-10 gr. }             |                            |
|     | { Sparteine Sulph.....                                                     | 1-5 gr. }              |                            |
|     | { Strychnine, Nitrate.....                                                 | 1-8 gr. }              |                            |
| 102 | Cocaine Muriate.....                                                       | 1 gr.                  | 30                         |
| 124 | Cocaine Muriate.....                                                       | 1- $\frac{1}{2}$ grs.  | 40                         |
| 125 | Cocaine Muriate.....                                                       | 2 grs.                 | 45                         |
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| 104 | Coniine Hydrobromate.....                                                  | 1-2 gr.                | 43                         |
| 128 | Coniine Hydrobromate.....                                                  | 1 gr.                  | 60                         |
| 105 | Digitaline, Pure.....                                                      | 1-8 gr.                | 12                         |
| 129 | Digitaline, Pure.....                                                      | 1-4 gr.                | 20                         |
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| 157 | Ergotine.....                                                              | 4 grs.                 | 27                         |
| 113 | Eserine Salicylate.....                                                    | 1-4 gr.                | 50                         |
| 133 | Eserine Salicylate.....                                                    | 1-2 gr.                | 75                         |
| 134 | Eserine Salicylate.....                                                    | 1 gr.                  | 125                        |
| 135 | Eserine Salicylate.....                                                    | 1 $\frac{1}{2}$ grs.   | 190                        |
| 106 | Eserine Compound.....                                                      |                        | 1 00                       |
|     | { Eserine Salicylate.....                                                  | 1-4 gr. }              |                            |
|     | { Pilocarpine Muriate.....                                                 | 1-2 gr. }              |                            |
|     | { Strychnine.....                                                          | 1-8 gr. }              |                            |
| 153 | Eserine and Pilocarpine.....                                               |                        | 1 25                       |
|     | { Eserine.....                                                             | 1-2 gr. }              |                            |
|     | { Pilocarpine.....                                                         | 1 gr. }                |                            |
| 154 | Colic (Forbes).....                                                        |                        | 2 20                       |
|     | { Eserine Salicylate.....                                                  | 1 gr. }                |                            |
|     | { Pilocarpine Mur.....                                                     | 3 $\frac{1}{2}$ grs. } |                            |
| 107 | Hyoscyamine Sulphate, Crystals.....                                        | 1-8 gr.                | 75                         |
| 146 | Hyoscyamine Sulphate, Crystals.....                                        | 1-4 gr.                | 130                        |
| 108 | Morphine Sulphate.....                                                     | 1 gr.                  | 20                         |
| 136 | Morphine Sulphate.....                                                     | 1 $\frac{1}{2}$ grs.   | 30                         |
| 137 | Morphine Sulphate.....                                                     | 2 gr.                  | 35                         |
| 138 | Morphine Sulphate.....                                                     | 2 $\frac{1}{2}$ grs.   | 45                         |
| 155 | Morphine Sulphate.....                                                     | 3 grs.                 | 50                         |
| 109 | Morphine and Atropine.....                                                 |                        | 45                         |
|     | { Morphine Sulph.....                                                      | 1 $\frac{1}{2}$ grs. } |                            |
|     | { Atropine Sulph.....                                                      | $\frac{1}{2}$ gr. }    |                            |
| 139 | Morphine and Atropine.....                                                 |                        | 45                         |
|     | { Morphine Sulph.....                                                      | 1 $\frac{1}{2}$ grs. } |                            |
|     | { Atropine Sulph.....                                                      | $\frac{1}{2}$ gr. }    |                            |
| 140 | Morphine and Atropine.....                                                 |                        | 50                         |
|     | { Morphine Sulph.....                                                      | 2 grs. }               |                            |
|     | { Atropine Sulph.....                                                      | 1-4 gr. }              |                            |
| 141 | Morphine and Atropine.....                                                 |                        | 60                         |
|     | { Morphine Sulph.....                                                      | 2 $\frac{1}{2}$ grs. } |                            |
|     | { Atropine Sulph.....                                                      | 1-4 gr. }              |                            |
| 142 | Nitroglycerine.....                                                        | 1-10 gr.               | 12                         |
| 143 | Nitroglycerine.....                                                        | 1-5 gr.                | 16                         |
| 110 | Pilocarpine Muriate, Crystals.....                                         | 1-2 gr.                | 50                         |
| 144 | Pilocarpine Muriate, Crystals.....                                         | 1 gr.                  | 90                         |
| 145 | Pilocarpine Muriate, Crystals.....                                         | 1 $\frac{1}{2}$ grs.   | 110                        |
| 111 | Sodium Arsenite.....                                                       | 1 gr.                  | 12                         |
| 112 | Strychnine Sulphate.....                                                   | 1-4 gr.                | 10                         |
| 147 | Strychnine Sulphate.....                                                   | 1-2 gr.                | 11                         |
| 148 | Strychnine Sulphate.....                                                   | 1 gr.                  | 12                         |
| 149 | Veratrine Muriate.....                                                     | 1-4 gr.                | 12                         |
| 150 | Veratrine Muriate.....                                                     | 1-2 gr.                | 12                         |

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**Continued on adv. page 19.**

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# AMERICAN VETERINARY REVIEW.

AUGUST, 1909.

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## EDITORIAL.

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### EUROPEAN CHRONICLES.

PARIS, MAY 15, 1909.

**LATENT TUBERCULOUS INFECTION.**—A short time ago I related the remarks made by Prof. Vallee upon the very interesting subject of what he calls "Occulte Tuberculosis," and in it I alluded to the discoveries made in that direction by Director S. Arloing. In the *Journal de Zootechnie*, of Lyon, I am just in possession of an article on the subject by the learned doctor, entitled "Documents Upon the Presence of the Bacilli of Koch in the Lymphatic Glands with Absence of Apparent Tuberculous Lesions."

The researches and discoveries of Arloing on this go back several years and he states that, like Joest, C. Noach, C. Liebrecht and Vallee, he has observed the presence of the bacilli, among tuberculous lesions, in lymphatic glands, which were not in connection with the viscera affected and did not present to the naked eye any apparent alteration.

At one time it was believed that tuberculosis of the lymphatic glands was symptomatic of the tuberculization of the organs from which the afferent vessels to the gland were coming. But after numerous and close observations it appeared that tuberculosis of the glands could also be primitive, either because the tuberculous virus was transported directly by the lymphatics or again by the venous circulation into the glands. Indeed, retro-pharyngeal glands were found extensively tuberculous without any apparent

lesion in the adenoid tissue of the fauces, bronchial lymphatic glands were seen much hypertrophied and with calcareous centers and yet the lungs were free from tubercles and again tuberculous glands were found in the center of muscular masses free from disease. Chauveau had also noticed this last and recommended the examination of the principal inter-muscular glands of tuberculous cattle. This frequency of the primitive tuberculosis of the lymphatic glands attracted the attention, specially upon those which were hypertrophied or only swollen and which, however, presented no tuberculous alterations to the naked eye. They were examined under the microscope. Undoubtful lesions were discovered. Not always the classical tubercular follicles, but often simple infiltration of more or less epithelioid cellular elements, or again cellular elements mixed in a finely granular mass, already degenerated and not taking coloring matter. As in many cases, these lesions were obscure, inoculation was resorted to, so as to establish their nature. Reduced into pulp, this was inoculated and tuberculization of the animals experimented with was the result. The conclusion was that lymphatic glands could possess tuberculous virulency without having any trace of microscopic lesions.

\* \* \*

Many are the investigators who, by their researches, have established this scientific fact.

Prof. Loomis, of New York, in 1890 inoculated rabbits with pieces of tracheo-bronchial glands taken on 48 persons free from tuberculosis: 18 rabbits died without results, 8 took tuberculosis. Loomis concludes that man can carry Koch's bacilli in his bronchial lymphatic glands.

Terrile in 1897 obtained similar results.

Pizzini in 1902 inoculated guinea pigs and found the tracheo-bronchial glands virulent in 40 out of 100 cases.

McFadyean and McConway in 1903 inoculated mesenteric lymphatic glands in similar conditions. They found them virulent in the proportion of 25 per cent.

Harbitz of Christiania showed by experimentation that tuberculous virulency exists in 26 per cent. of the cases he examined, and in which pathological anatomy had failed to detect it.

Similar facts have been frequently observed in experimental tuberculosis.

Therefore, besides the latent tuberculosis, that is tuberculous localization, inactive, very limited, there is also a latent tuberculous infection in which the bacilli of Koch do not yet manifest their presence by an alteration perceptible to the naked eye or to the microscope.

Therefore, if the latent tuberculous infection of the lymphatic glands is observed among subjects free from tuberculous lesions, *a fortiori* must it also exist in subjects carriers of more or less extensive lesions.

In finishing his article, Director Arloing after giving his *modus operandi*, relates ten observations which he carried out personally with lymphatic glands, free from tubercular lesions to the naked eye, and resumes nine of them as follows:

Number of animals inoculated, 42; becoming tuberculous, 13; remaining healthy, 29.

Conclusions: 1°—Tuberculous infection may extend beyond macroscopic tuberculous lesions in tuberculous subjects.

2°—Lymphatic glands inclosed in the flesh of cattle and pigs ought to always be held as suspicious.

3°—Consumers will do well to always push aside in their plate glands that they may find in the meat presented to them to eat!

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MIXED TUMORS.—At one of the meetings of the Société de Pathologie Comparee some time ago, Prof. Petit, of Alfort, presented a number of specimens of mixed tumors of the *mammæ* in dogs, which gave him the opportunity for a kind of clinical review concerning these neoplasms.

They are conjunctive tumors, particularly characterized by the presence of bones and of cartilage in their structure. Prop-

erly speaking, this condition varies considerably and the complete histological diagnosis is rather laborious. Indeed all the tissues of the conjunctive family may be found in them, from the most embryonic to those of adult development. And as a consequence the nomenclature of these neoplasms is as varied as it is complicated; fibro-sarco-chondromas, myxo-chondro-osteomas, osteo-chondromas, etc. These tumors are often cystic; it is because the epithelial tissue of the gland does not remain inactive, but proliferates and gives rise in some parts to more or less growing and cystic adenomatous formations.

Why should these tumors be so frequent in sluts? This is possibly due to the number of mammæ, which then increase their chances for apparition. Yet it must be remembered that inguinal mammæ are the ones most affected. The situation of the organs in sluts expose them to traumatism, but it is not known if that plays any etiological or pathological part in their development.

These tumors may reach very large size and then their surface is always more or less inflamed and ulcerated. Their growth varies, and they may in a few months be twice, three or even ten times as big as when they started. Still at times, when they have reached a certain dimension, they remain at that point. These tumors are benignant in that they do not become generalized. However, Petit has observed several times, in animals having mixed tumors of the mammæ, the presence of sarcomatous pulmonary metastatic centers, without the co-existence of a primitive tegumentary or visceral sarcoma. And as embryonic sarcomatous conjunctive tissue was present in the mammary tumor, it might be possible that by exception generalization might occur. At any rate if malignity is possible under sarcomatous form, the rule for mixed tumors is to remain benignant.

In relation to the pathogeny of these formations, there are two theories. The inclusive and the metaplastic. The first, originated in Germany and to-day accepted all over in that country, considers mixed tumors as kind of embryomas in which, at their origin, peculiar inclusions of tissues (skeletogenous) would occur. While in the second, that by metaplasia, it is only the for-



mation in the tumors of bones or cartilages corresponding to the simple metaplasia or transformation of the ordinary conjunctive tissue. The mammæ indeed contains all that is necessary for the formation of osteo-chondroma. And if proofs of this transformation of development in the conjunctive cells are numerous in the mammæ, there are many others very frequent, which result from the same condition, such as the ossification of the inflamed synovial in synovitis and arthritis of horses (ossified wind galls, and thoroughpins); the tendinous and muscular ossifications as the osteomas of the adductor muscles in man and the aponeurotic osteoma of large animals; the ossification of inflamed arteries and those of the aneurismal walls in horses; that of the cardiac clots in endocarditis of cattle; that of the conjunctival envelope of some tumors as in the ossified adenoma of the cœcum of horses; that of the dura mater in ossifying pachymeningitis of dog; the progressive ossification of the pulmonary alveolar walls in enquete of Argentine cattle, etc., etc., and many others that show evidently the possibility of the conjunctive tissue to develop into bone or cartilage. All conjunctive tissues have a common origin, their properties are identical, they transform into one another easily and behave in pathology as they do after all, in the course of the development of the normal organism and metaplasia is sufficient in theory to explain the pathogeny of mixed tumors of the mammæ.

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AN IMPORTANT LAW SUIT.—It is not customary to find in our professional journal records of law suits, where the difference of opinions between veterinary experts is brought about, whether as is frequently the case in relation to a question of soundness or unsoundness, or when an action at law is brought for a supposed offense with the laws for the prevention of cruelty to animals. We differ on that with European publications and probably it is better; as after all, that exhibition of professional discrepancies is not likely to be of any advantage to the profession, if it is to one or another individual. But it matters not, and yet it is a pe-

culiar fact that, whether these cases are not common in the United States or whether no one thinks them worthy of record, at any rate they have seldom, if ever, been presented in our pages. Perhaps it is best, for law quarrels are always more or less objectionable. Shall I be excused for presenting the following?

I have found lately in one of our best exchanges, *Veterinary News*, a concise record of a very important case decided a short time ago in the United States and, although it has not been as favorable to some of our friends as they expected, without desiring to appear to be on one side more than on the other, I relate the case as recorded in the *Montreal Daily Star* and as it appears in the *News*.

#### MONTREAL FARMERS LOSE GREAT SUIT AGAINST SMELTER.

Judgment has just been rendered in Montana in a case of the highest importance, involving not only a claim for some \$2,000,000 damages, but also the fate of the greatest copper smelter on earth. The suit was brought by the farmers of Deer Lodge County, Montana, against the Anaconda Copper Mining and Smelter Company, Dr. D. McEachran, Montreal, had charge of the company's scientific defense. The plaintiffs sought to recover damages and to secure an injunction to prevent the operation of the smelter.

The farmers complained that the smoke from the smelter caused damages to their crops, animals and land. Dr. Duncan McEachran was placed in charge of the scientific investigations necessary to establish the relation of the company to any damage that might be caused in the neighborhood. He began this work in 1905 and on his preliminary report the company based its successful defense. Dr. McEachran associated with himself in this work Prof. Theobald Smith, of Harvard University; Prof. Veranus A. Moore, Director of the New York State Veterinary College, Cornell University; Prof. Leonard Pearson, Dean of the Faculty of Comparative Medicine, Pennsylvania University; and Dr. A. H. Gardner, of Boseman Agricultural College, Montana,

with Dr. Williams Wherry and two assistants in charge of the Bacteriological Laboratory. Besides the above-named gentlemen who had to deal with the questions affecting animals, there were employed chemists, toxicologists, physicists, mining engineers, smelting experts, plant pathologists, botanists, meteorologists and soil experts, stockmen, farmers, butchers and various other experts in different lines.

The investigations by the army of scientists began in June, 1905, and the hearing opened in January, 1906, before Justice Grane, Master-in-Chancery, and continued until March, 1907, one year, two months and eleven days. Two hundred and fifty witnesses were heard in more than three hundred separate examinations. Eight hundred and thirty-five exhibits were placed in evidence, comprising several cartloads of animal, vegetable, photographic and printed matters. It is not surprising, therefore, that the judge who had to render the decision took nearly two years to go over the record and arguments in the case.

It is rumored that an appeal to higher court is to be presented by the farmers of Deer Lodge County!

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CARING WILD ANIMALS IN SICKNESS.—I suppose that things are much changed since the year of 1865 or 1866, when I was fortunate enough to be (thanks to my friend Conklin, then manager) the attending veterinarian of the few sick animals that were now and then found in the zoological garden of the Central Park in New York. It was then if I am not mistaken the only one deserving that name in the United States. Now all the grand cities of America have Central Parks of their own and zoological gardens; and for them the position that I held years ago has considerably changed also, I suppose. To mention but one. No doubt, the name of Prof. W. Reid Blair, veterinary pathologist to the Zoo of New York, is familiar to all of us. Well, zoological gardens have grown, they are to-day in all probability centers of enjoyment for many, and of instruction for a few; and it is certain that they can rivalize with any that exist

anywhere, providing they receive the proper financial support which they need. But I am afraid that the next step which is being realized in the Zoo of London will remain for a while absent from American gardens. Indeed an infirmary for wild animals and birds is being erected, with an operating room, a post-mortem room and an anatomical and pathological laboratory. This hospital will be big enough to receive all kinds of animals, and while there may not be accommodations for elephant, hippopotamus or rhinoceros, yet every other denizen of the gardens may be cared for in the hospital, lions and tigers included. Wild animals are like human beings when they are ill, they need quietness, and the best way for them to escape the attention of sight-seers is to remove them to the hospital. The advantages and necessities for the hospital are considered as follows by the *Morning Post*:

“To a large extent pathologists are ignorant of the diseases of wild animals, even when the pathologists have the great experience of those connected with zoological collections. On the other hand, knowledge on the subject is steadily advancing in spite of the difficulty of handling the creatures and diagnosing the case. The officials at the Zoo are not, however, entirely, without guidance when treating their patients medicinally, for animals most like man, that is the apes, suffer from ailments similar to him. The further the creatures are from human beings in constitution, the less like them are they in disease and the more difficult to treat. Again, however, there is some clue to the course to be followed. Next to man's ailments we know most about those of domestic animals, and so the treatment needed by a sick cat is some guide in dealing with ailing lions, tigers and leopards, which are nothing but big cats. Experience in doctoring dogs is applied to foxes and wolves. Knowledge of the ailments of cattle benefits buffalos, bison, antelopes and wild cattle. The medical treatment of pigs is useful to wild boars and so on. But zoological classification is not everything in dealing with the diseases of wild animals. The rhinoceros and the tapir come under the same category as the horse, the hippopotamus under

that of the pig, while the camel, though a class in himself, is at least a ruminant like many other creatures; but it cannot be said with certainty that any of these wild animals have exactly the same diseases as the domestic representatives of their classes. Indeed, there are few if any cases in which that assertion can be made with confidence."

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TUBERCULOUS LESIONS OF THE TRACHEA.—Veterinarians are, generally speaking, familiar with almost all the lesions that are found in tuberculosis, and except those that one has difficulty to establish in those recently named forms of the disease, the occult tuberculosis, they are readily made out; even if small and difficult to detect. Yet there are some which assume at times a peculiar aspect; and it is to those that a sanitary veterinarian, Mr. Chretien, refers in the article that he has published in *Hygiene de la Viande et du Lait*, under the title of "Peculiar Tuberculous Lesions of the Trachea."

Tracheal lesions are relatively frequent in tuberculosis of bovines. They are observed under the form of isolated or agglomerated ulcerations, interesting the mucous membrane of that organ. They are the final stages of tubercles which have developed in the very thickness of the mucous membrane. They undergo rapidly the caseous degeneration, become softened and ulcerate inside of the trachea, where they form ulcerated surfaces, sometimes granulating, which cicatrize exceptionally. Their situation varies, but most ordinarily they are in the upper part of the trachea, in the region near the larynx, where the lymphatic vessels are very abundant.

But besides these lesions, there are others, which have an altogether special situation. They are found in the conjunctive fibrous tissue included between the sides of the triangular space formed by the two cartilaginous crests of the trachea and the muscle of Reissessen, resting on the mucous membrane. The lesions are found only by a transversal, or better, a longitudinal section of the trachea, interesting the mucus in its superior part and the conjunctive tissue situated between the cartilages.

Microscopically, they present themselves as small nodules, fibrous and varying in size from that of a seed of millet to that of a pear or again being as large as a true abscess with thick walls and containing thick whitish creamy pus.

These lesions are always well defined and do not seem to involve the cartilages nor the muscle. The author has found these lesions in 51 occasions out of 268 cases of tuberculous animals. The microscopic examination of the contents of the abscesses may remain negative, or again the subcutaneous inoculation to guinea pigs may be followed by the specific infection and generalized tuberculosis.

The histological examination of the nodules show that the lesions are more or less fibrous, or casefied or infiltrated with calcareous salts; but without giant cells. It is exclusively located to the intermediate connective tissue between the muscle of Reissenssen and the cartilage. There is no tendency to involve the mucous membrane. As to the pathogeny of these lesions, it is explained by the infection of the lymphatic or of microscopic glands, in relation with the bronchial glands which are always affected in those cases.

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GIRKI and GIDDAH are the names given to a disease described in the *Journal of Tropical Veterinary Science* by A. S. Leese, Esq., M. R. C. V. S., in an article on "Two Diseases of Young Camels."

"This affection is found in camel bachas, bred and reared on the Kala Chitta range in Attock district. Girki means knuckling and Giddah deformity. The young camel begins to show girka or knuckling of the fore and hind fetlocks at about six months of age, and unless removed from the stony rakhs, he gets worse and the fetlock joints take an inward bend and soon become quite deformed. At a more advanced stage, the knee joints themselves bend inwards and knock together when the animal walks. There is no marked bony enlargement until the joint begins to bend inwards when an exostosis of a compensatory kind is formed.

Lameness may be absent, slight or again quite severe. The general condition of the animal remains good.

" The cause of this affection is the hard nature of the surface of the range which is covered with loose stones; this is too much for the immature joints of the very young bachas, and they suffer accordingly. The condition is distinct from rachitis.



Two-year-olds reared from birth on stony rakhs. The deformity and the good general condition is well shown.

THE JOURNAL OF TROPICAL VETERINARY SCIENCE, VOL. IV, PART I.

" Prevention.—Although known to local camel men, these conditions rarely occur in camel bachas, because most of the stony rakhs are closed to private camel-grazing, and it is a local practice

at the end of the breeding season to take dachis and young bachas down to the cultivated parts of the country, and as a matter of facts, to take the young animals off the stones when they are very young. When the animal is about one year old, there seems to be little danger of causing deformity. His feet have become hardened and the animal gets accustomed to hill-climbing and hill-grazing, which are important qualities for camels destined for military transport work."

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ASSOCIATION OF LIVE STOCK SANITARY BOARDS.—In the May REVIEW an acknowledgment was made of the publication of the proceedings of the 12th annual meeting of this organization. It was scarcely a sufficient notice, as the report deserves a better one, and although it is nearly ten months since this meeting has taken place, I hope I may be permitted to say a word about it or at least about the transactions that took place.

It is to Doctor C. E. Cotton, of Minneapolis, who is and we hope will remain the Secretary and Treasurer of the Association, that those who desire to read the report of the proceedings must address themselves. Of course, the business of the meeting were of themselves interesting, and during the three days that the convention lasted, the reading of the papers and their discussion with other miscellaneous subjects, there has been but little time to spare. The subjects of the Progress of Tick Eradication was treated by Dr. Tait Butler; that of the Prevention of Hog Cholera by Chief A. D. Melvin; State Meat Inspection by Dr. J. M. Wright; Glanders by Dr. S. W. Ward. The subject of Tuberculosis called for papers from Dr. Luckey on the Federal, State and City Co-operations in the Eradication of Tuberculosis, from Dr. Klein on the Control of Tuberculosis in Pennsylvania, from Dr. Dalrymple on Bovine Tuberculosis in Louisiana and some other Southern States, from Chief Melvin on the Control of Tuberculosis. Doctor J. R. Möhler presented also a report on three diseases of animals which have recently assumed importance to the sanitary veterinarians of the states.



After a series of obituary resolutions, the following were moved and accepted:

1°—In relation to the vaccine of the Board of Animal Industry; that the association, in view of the efficacy of the vaccine as a preventive and control measure, heartily recommend that all state legislatures be requested by their representatives, now assembled, to appropriate sufficient funds, whereby such vaccine may be manufactured and distributed under the direction of the state authorities charged with the control of animal, contagious and infectious diseases of their respective states.

2°—That the Association strongly recommends closing all public watering troughs in and during any outbreaks of glanders, and that hydrants from which teamsters may draw water in private buckets be substituted for the type of watering troughs now in common use.

3°—That the Association urges upon every state the enactment of some provision looking to the immediate eradication of tuberculosis from the herds of its state institutions.

4°—That the action of the Board of Commissioners of the District of Columbia, viz., the promulgation of an order requiring the muzzling for a period of six months of all dogs while at large in the District, be highly commended by this Association with the recommendation that similar action be taken by all sanitary officers in other sections where rabies is known to prevail.

5°—That this Association recommend that the law be modified to allow the shipment interstate of tuberculous cattle to any abattoir at which the United States Department of Agriculture maintains inspection. Shipment to be under such restrictions as the Secretary of Agriculture in his wisdom may determine.

6°—That this Association request that when cattle shipped from one state into another for dairy or breeding purposes are found to be tuberculous upon inspection at destination, that the proper authorities of the state into which the cattle has been shipped be authorized to issue, upon request from the consignor, a permit for the return of said cattle in quarantine to the point of

origin, provided notice of such return is given immediately to the proper authorities of the state to which the cattle are to be returned.

Every veterinarian must hope for the realization of all those wise notions.

The next meeting of the Association will take place in Cheyenne.

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Among the pamphlets that I have received this month, there is one from the Bureau of Animal Industry, "The Score-card System of Dairy Inspection," by M. M. C. B. Lane and G. M. Whitaker, one from the Department of Agriculture from the State of New York on the Nature and Diagnosis of Rabies and Its Extent in New York, by Director V. A. Moore, and the very interesting report of the State Veterinary College for 1907-1908, as transmitted to the legislature in 1909.

A. L.

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## THE VETERINARY CONVENTION AT CHICAGO.

In the June issue, the REVIEW dwelt somewhat at length on the advantages of Chicago as a convention city for the A. V. M. A., so that to elaborate further on that aspect of the approaching meeting is useless. Let us rather dwell upon the outlook from the present indications. Two of the most important factors in the success of any convention next to an auspicious place of meeting, are a large attendance and a good program. Of the former, we have every indication, from the national voice of the veterinarian as it is wafted into the REVIEW office from the four points of the compass, eagerly anticipating the "coming meeting of the A. V. M. A." Of the latter we have positive evidence in the form of a communication from Secretary Lyman (which will be found in our correspondence department), em-

bodying a program up to the date of his writing that constitutes in itself an inspiration to be present at the proceedings of the Forty-sixth Annual Convention of the American Veterinary Medical Association, that it will be difficult to resist even by those who have thus far withstood the temptation, feeling that they could not afford the time necessary to attend it. They now, on reading the program, realize that, on the other hand, they cannot afford to miss the opportunity of participating in the deliberations of their national organization, and conclude to "break away" and meet their professional brethren at Chicago. This is a very sane realization and wise conclusion, and where it is possible, should include the wives of veterinarians who are fortunate enough to have them. In concluding our suggestions to those who are planning to attend the Veterinary Convention at Chicago on September 7, 8, 9 and 10, we may be pardoned if we sound a warning against possible error in the dates by misleading stationery of resident state secretaries. This may seem superfluous until we explain, that with but *one exception* all letters that have been received at the REVIEW office from resident state secretaries have borne the *original, discarded dates* set for the A. V. M. A. meeting, and are still coming in that way. Therefore, we repeat, that you cannot be too careful in recording the dates given you in your communications from Secretary Lyman, and as published in the REVIEW. CHICAGO, SEPTEMBER 7, 8, 9 and 10.

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### AN INNOVATION IN ORGANIZATIONS.

An organization has been formed at Upper Sandusky, Ohio, that surely marks an era in the advancement of comparative and sanitary medicine. "The Ohio Society of Comparative Medicine" is the outgrowth of the efforts and hospitality of Dr. G. W. Cliffe, of that place, who a year ago entertained veterinarians

from all parts of Ohio, together with the physicians from his locality. Sufficient enthusiasm in a common cause was stimulated at that gathering, in physicians and veterinarians alike, to prompt the organization of the above-named society.

When it holds its first annual meeting at Upper Sandusky, August 25th and 26th, it will be unique in that its president is a veterinarian and its vice-president is a physician. Its secretary-treasurer is a veterinarian, giving the veterinarians the majority in its officers.

In its executive board the same condition exists, for, while the chairman is a physician, three of the five members of the board are veterinarians. This amicable commingling of physicians and veterinarians on common ground, and in a common cause, sanitary medicine, is surely a step in the right direction, and much good from it must accrue, as the physician and veterinarian have so much to offer each other.

The result of this exchange of thought and different experiences in the application of the principles of medicine, is manifest in the very attractive program\* which they have prepared. Not too extensive, but carefully selected. The REVIEW strongly indorses the movement, commends those that have begun it, predicts excellent results from it, and urges its emulation in other localities.

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AMERICAN VETERINARIANS AT THE HAGUE.—Several prominent American veterinarians have already departed for Europe to attend the International Congress at The Hague in September. Others are contemplating going. The *quality* of the men that have already gone from America insures us good representation at the Congress; and we shall look forward to excellent reports of the proceedings, on their return.

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\* Printed on page 622, this issue.

## ORIGINAL ARTICLES.

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### FEDERAL MEAT INSPECTION AND MUNICIPAL ABATTOIRS.

BY G. A. JOHNSON, D. V. M., INSPECTOR BUREAU OF ANIMAL INDUSTRY,  
SIOUX CITY, IOWA.

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Meat Inspection, in a broad sense of the term, is a very important subject, one that is not only very closely interwoven with the wholesomeness of the meat supply, but also with the live stock industry of the country. For this reason it will be impossible to more than very briefly touch upon some of the more important points of the subject.

Meat inspection is not new, it having been practiced in some form and to a certain extent since the time of Moses, the Jewish law giver; nevertheless, it is doubtful if the masses have ever had a very comprehensive idea of its importance.

When we take into consideration that the per capita consumption of meats in this country is approximately 180 pounds per annum, that it forms approximately 30 per cent. of the total nutritive material, and amounts to about 30 per cent. of the total cost of living, and the fact that our meat-producing animals are subject to diseases, which not only render their flesh unwholesome for food, but which are also capable of being directly transmitted from the lower animals to man through the consumption of the flesh, under certain conditions, it must be agreed that efficient meat inspection is of great sanitary importance.

It has been stated that meat inspection has kept abreast with sanitary science and the knowledge of the etiology of disease, but this may be questioned, for we find that aside from the federal system, meat inspection has, until recently, received but little

official action in this country; and it is an acknowledged fact that the federal inspection law was forced upon us by foreign countries refusing to purchase our surplus meat products because they were not inspected.

As a consequence our federal inspection was at first based upon commercial grounds, solely, but I am happy to state that federal inspection has developed from this crude beginning, until to-day, it is a most comprehensive system based upon scientific principles.

On the other hand, municipal inspection has made but little progress. This may be accounted for, at least in part, first because a meat inspection system can be more easily perfected under federal than under state or municipal governments; second, it can be more economically conducted in large establishments than small ones; third, the necessary money can usually be more easily secured through Congress than through the ordinary state legislature or city council; and fourth, but not least, the states and municipalities have not had the strong commercial spirit to urge them on, as has the federal government; or to put it in another way, they have not been sufficiently "jungleized." Yet any municipality can have efficient meat inspection whenever a majority of its citizens demand it and are willing to pay the expense, provided too many do not demand it at the same time.

The Act of Congress of March 3, 1891, provided for the inspection of live animals and the carcasses at the time of slaughter, but it failed to provide for further supervision of the meats.

This was satisfactory so far as it went, but it soon became evident to those intimately connected with the work that it did not go as far as it should, yet it was not till after the meat scandal, with which you are all familiar, that Congress was induced to pass the law known as "The Act of Congress of June 30, 1906," which empowers federal inspectors to assume supervision not only of the slaughtering, but also of the care, curing and shipping of all edible products, in those establishments operating under federal inspection.

This supervision consists, first, in an ante-mortem inspection of the animals to be slaughtered; second, a macroscopic inspection of all carcasses at the time of slaughter, and third, a close supervision of the curing, processing and marking, of all meats handled in the establishment.

The ante-mortem inspection consists in having all animals destined to establishments operating under federal inspection, inspected by skilled men for evidence of any disease that might render the flesh unwholesome for food; and in case an animal is found to be so diseased it is tagged for identification, and a notice is forwarded to the inspector conducting the post-mortem inspection, giving the reasons for tagging the animal and such other information as may be deemed advisable. Such animals are killed separate from others and are disposed of in accordance with the pathological lesions presented, in connection with the information obtained from the ante-mortem inspection.

The post-mortem inspection consists in making a close macroscopic or digital examination of, first, the lymph glands of the head and throat; second, the viscera and accompanying lymph glands; and third, an examination of the serous membranes, the vertebræ, etc., after the carcass has been split. In case lesions or conditions are discovered that render the carcass or a part thereof unwholesome or unfit for food, it is condemned and destroyed for food purposes.

In this connection it should be understood that a place or retaining room is provided where diseased or abnormal carcasses that cannot be given sufficient inspection on the killing floor are sent for final inspection and disposition.

Thus it will be seen that a very rigid and comprehensive inspection is given all carcasses before they are passed for food. And in order that this work of the Bureau should be done on a scientific basis, the Hon. James Wilson, Secretary of Agriculture, appointed a commission composed of eminent physicians and veterinarians who were not connected with the Bureau, to investigate and advise relative to the disposition of meats affected with

disease or abnormal conditions, and this part of the work of the Bureau is being carried out along the lines laid down by this commission of experts.

However, the work does not end here as formerly, but it is carried on in each department of the establishment by Bureau employees. A meat inspector is placed in the cutting room to see that the work is done in a cleanly manner and to secure and condemn any meats that are allowed to become dirty, or diseased parts that may have escaped detection on the killing floor; other employees are stationed in the pickling and smoking departments to see that the work is done in a cleanly manner, that no deleterious preservatives are used and to inspect the meats being shipped from these departments in order to detect and condemn such as may have undergone deterioration during the curing process; similar supervision is given to the canning and sausage departments to see that the products are handled in a cleanly and sanitary manner, that no spoiled or diseased meats are used, and that all products are branded what they are. To illustrate, pig tongues must not be branded lamb tongues, nor minced meats branded pressed ham, etc.

Strict supervision is exercised over the rendering and refining departments to see that none but clean, sweet, wholesome fats are used, and that the products are properly branded.

The sanitary conditions of the establishment are looked after and it is required that all of the work of handling and caring for the meats and meat food products be done in a cleanly manner by clean workmen, using clean utensils. Proper facilities for the disinfection of the workmen's hands and tools that may become contaminated in the handling or cutting of diseased tissues, and suitable dressing rooms and toilet facilities for the employees are required.

Summarizing, it may be stated that the Bureau maintains a strict supervision over the entire process from the time the live animal is purchased until the finished product leaves the establishment; and when any meat or meat food products at any stage



of preparation, are found to be unwholesome or unfit for food, they are condemned and destroyed for food purposes.

The United States may well be proud of the federal meat inspection service, which has become a vast and comprehensive system based upon modern sanitary science, and enforced by a corps of men appointed through civil service examinations, and supported by the prestige and authority of the federal government.

Under our form of government it is, and probably will remain, impossible for the federal authorities to prescribe that the people of Iowa, or any other state, shall eat none but inspected meats.

On the other hand, the federal government has the authority and does say that meats and meat food products cannot be shipped interstate or exported unless they have been inspected and passed by federal inspectors, except in the case of the farmer slaughtering his own animals.

It is estimated that only one-half to three-fifths of the meats consumed in the United States are slaughtered in establishments operating under federal inspection, thus leaving from two-fifths to one-half of the total to be slaughtered under some other form of inspection, or as is more often the case without inspection of any form.

Hence it will be seen that the federal system does not cover the entire field as the national systems of some Continental European countries do.

Again, a very large per cent. of the meats slaughtered under federal inspection is either exported or consumed in the large cities, consequently the rural districts, villages and small towns must depend largely upon locally slaughtered, uninspected meats.

Another point: At all markets where inspection is maintained, visibly diseased animals are either sold subject to post-mortem inspection or at so low a price as to protect the buyer, which has a tendency to keep such diseased stock away from these markets.

The knowledge of this gives the unscrupulous butcher an opportunity to purchase such animals from the careless or unscrupulous.

pulous owner, at a low price, to slaughter them, and feed the diseased parts to hogs, while the remainder of the carcass is taken to the market and sold to his friends and neighbors.

There is little danger of a butcher who carries on this character of business being detected because he has no inspection, and his slaughter house is located in some out of the way place and usually kept in so filthy a condition that no outsider will venture near it unless required to do so.

The larger profits thus obtained furnishes the inducement. Similar action upon the part of the large meat packing concerns was one of the things that made it necessary to establish a federal meat inspection system, and it is a strong reason why we should have state or municipal supervision in connection with the federal inspection.

Again, the percentage of diseased animals slaughtered by the local butcher is usually larger than in animals slaughtered in the larger establishments, because his animals are usually older and are purchased from nearby dairies and farms, and are therefore, more likely to be diseased than are younger or range animals which form a considerable per cent. of the cattle killed in the larger establishments.

Because of these and the fact that many retail butchers keep government inspected meats prominently displayed in their markets, obviously with a view of leading people to believe that they are dealing in inspected meats, while in fact the bulk of the meats they handle are not inspected, really places the people who patronize such dealers under conditions more dangerous than if there were no inspection.

It should be understood, however, that there is no good reason why such conditions should prevail where it is practicable to obtain inspected meats, because there the people can secure the benefits of inspection if they desire it, by purchasing only inspected meats, but there are many places where it is impracticable to secure inspected meats, especially in the fresh state, as beef, mutton and fresh pork.

In view of these conditions and the fact that the federal government is doing all that can reasonably be expected to protect the citizens of every state from the dangers of a contaminated meat supply from without, it would appear that each and every state is under moral obligations not only to itself, but also to the federal government as well as for sanitary reasons to adopt reasonable measures to furnish its people with a clean, wholesome meat supply.

Or to put it in another way, why should the federal government spend large sums of money and condemn large quantities of meats when the public neglects to protect itself locally?

Presumably, it is this phase of the problem that is responsible for our considering the question at this time.

While some action has been taken and some progress made, it is a notorious fact that several other states are in the van of Iowa in sanitary regulations pertaining to live stock, of which meat inspection is one branch.

Again, but few cities of the state have as yet availed themselves of the opportunity to establish municipal inspection under the provisions of our state law.

This leads to the conclusion that a majority of the inhabitants of our cities are not yet sufficiently interested in the subject to demand meat inspection, being content to, perhaps unconsciously, consume more and more diseased meats each succeeding year.

Having thus briefly touched upon some of the principal conditions as they exist in the state, it will be pertinent to briefly consider what can be done to relieve the situation.

While the problem is a difficult one and progress may be slow, I have faith to believe that much can be accomplished and that eventually the problem will be satisfactorily solved.

Judging from the conditions as I see them, I am led to believe that the greatest need of the hour relative to meat inspection is the education of the people to a just appreciation of a sound and wholesome food supply and the dangers attending the

consumption of diseased meats. And who is in a better position to preach this gospel of truth than the physician, and is it not a moral duty that every physician owes to his patrons?

The prevailing thought appears to be that we must rely upon municipal inspection for a solution of the problem, but I question if the time is opportune for general municipal meat inspection.

While such a system can be practically operated in cities of 20,000 inhabitants or over, I doubt if it would be practical at this time for every village and town to attempt to maintain a thorough system of meat inspection, even should a majority of the citizens desire it and were willing to pay the expense, which they probably would not be, because it would be impracticable if not impossible to secure a sufficient number of competent men to do the work. And the attempt to enforce an inefficient system by incompetent men will be productive of as much, if not more, harm than good.

While some cities are maintaining municipal inspection and others are considering the proposition, some states have inaugurated state systems of meat inspection and the proposition is being discussed in others.

Of these two systems, that of state inspection or rather supervision, has much to commend it. If properly organized and the principles of civil service followed in appointing inspectors, it would be much more comprehensive and could be made uniform throughout the state, besides having the support and prestige of the stronger centralized power of the state government.

On the other hand, the state systems do not, and probably will not for some time to come, except in certain places, maintain as thorough and rigid inspection as might and ought to be maintained under the municipal system.

Pennsylvania has a very good law pertaining to state supervision. In general their plan contemplates the correction of the sanitary conditions of the slaughter-houses, meat markets, and the general methods of retailers.

While their plan, so far as I am aware, does not contemplate the erection of municipal abattoirs, it does authorize the state meat inspector to pay a certain per cent. of the valuation of tuberculous cattle carcasses that a butcher may report and which, upon inspection, are found to be so badly affected as to render the flesh unfit for food.

This is done on the theory that a butcher is entitled to as much remuneration for a condemned tuberculous carcass that he slaughters as is a farmer whose cattle are condemned on the tuberculin test, besides, it has a strong tendency to prevent such carcasses being sold for food. But this is practical only in those states that recompense owners for tuberculous animals, which Iowa does not at the present.

It is a well-established fact that many of our meat-producing animals are so extensively diseased that their flesh is unfit and dangerous for food, but it is not so generally understood that meats from perfectly healthy animals may through unsanitary handling become just as obnoxious and dangerous as that from diseased animals.

Or to state the proposition in another way, it is a question if the carcass of a healthy animal that is slaughtered in an old, dirty, filthy slaughter-house with old, dirty, and perhaps contaminated tools, without being washed or protected from flies, etc., is not as unwholesome and, perhaps, dangerous as that from diseased animals.

If this proposition is correct, and I believe it is to a greater or less degree, the slaughter-house phase of the problem has not received the attention that its importance demands.

A portion of my duties during the past year has been to investigate the condition of some of the small slaughter-houses in this state, and I wish to state most emphatically that a very large majority of those that I visited were as filthy and unsanitary as could well be imagined.

They were usually located in some out of the way place some distance from town, which, I believe, is required by law, usually

with poor or no drainage. They were frequently without water supply, while in some few instances the water used was derived from a small stream that flowed through the yard and past the slaughter-house.

In other cases the well from which the water supply was derived was situated in the yard where hogs were being fed on the slaughter-house refuse, and in some cases the well was situated outside of the yard so the yard and slaughter-house drained toward it. There are but few well-arranged slaughter-houses and in nearly all instances the uncooked refuse was being fed to swine.

If anyone thinks this overdrawn, let him make an investigation for himself.

If a butcher will permit his slaughter-house to remain in such a condition year after year, what would he do with a tuberculous or otherwise diseased carcass that he might knowingly or unknowingly slaughter?

The fact that many of the local butchers are renters and men of small means makes it impracticable for them to attempt to construct sanitary slaughter-houses. Hence from a sanitary standpoint it would be advisable for each municipality to construct an up-to-date abattoir of sufficient capacity to accommodate the butchers of the town.

There are two general systems of abattoirs, one known as the German and the other as the French. Under the German system the killing is all done in one room, while under the French system each butcher has a separate room or stall.

From a practical standpoint, the German system is preferable, because it is cheaper to build, easier to keep clean, and much better adapted for inspection. Again, in case two, three or more butchers are working at the same time in one room, should either slaughter a diseased animal in the presence of a competitor, he would practically be compelled to put it in the grease tank, whereas if each did his work in a small room separate from and out of view of the others, there would be a much

greater opportunity for removing the diseased parts and using the remainder.

The following suggestions are offered relative to the construction, location, etc., of municipal abattoirs. The building should be constructed of cement; there should be an ample supply of pure water, and good sewer connections should be provided either with the city system or a cess-pool; and provision should be made for cooking the abattoir refuse. This should be done for sanitary reasons; besides, the grease thus obtained will pay a good profit on the extra expense and the cooked product can be utilized with safety by being mixed with other feed for swine or for fertilizer.

The abattoir should be located where the natural drainage is good, if practicable, and near the edge of small places and near or within the boundary of larger places thereby being more convenient. Such a place properly conducted, will not be offensive or in any way prejudicial to the health of the nearby residents.

It would be advisable for the municipality to employ a janitor who would look after the building and assist the butchers in slaughtering. The butcher should pay a reasonable rent or fee, which in most cases would be sufficient to maintain the building and pay interest on the investment.

But should the municipality derive no financial returns from the building, it would be a most profitable investment from a sanitary standpoint. After having acquired the proper building, the municipality should adopt an ordinance forbidding the sale of meats within the municipality except such as had been slaughtered in the municipal abattoir or inspected and passed by federal inspectors. The Iowa State Pure Food Law forbids the use of preservatives and color substances for meats or meat products, and a certain number of inspectors are now employed to look after these matters. The state pure food law should be amended; to include, or better a new law enacted providing for, state meat inspection.

As before intimated, the state system should provide for a general supervision of all phases of the preparation and handling

of meats and meat food products, and be inaugurated as rapidly as the municipalities construct and maintain sanitary abattoirs, and where *practicable*, to establish and maintain efficient inspection.

Neither supervision nor inspection should be undertaken until the municipality has constructed a sanitary abattoir, because it is impossible to get even fair results with the present system of slaughter-houses.

With reference to the term "practicable" as used above, I would consider it practicable to have one or more inspectors, if necessary, at those points where considerable slaughtering is regularly done, but I would not consider it practicable to station an inspector at those small points where only one or two animals are slaughtered per week.

On the other hand, it would be practicable to divide the state into districts and assign a competent inspector to each district, whose duty it should be to enforce proper sanitary regulations relative to the condition of the abattoirs and meat markets, and the handling and preparation of all meats and meat food products.

While the district inspector would not always be present at the time of slaughtering, arrangements should be made with the butchers of the various towns to have the slaughtering done, as far as practicable, on regular days, i. e., those of town A to slaughter on Monday, those of town B on Tuesday, and so on, thereby affording the inspector an opportunity to personally conduct the largest number of post-mortem inspections. During the intervals of the inspector's visits, the janitor could hold any suspicious carcass until the inspector could be called in to pass upon it.

While such a system does not contemplate ideal inspection, it offers the following advantages: sanitary abattoirs and meat markets; clean sanitary methods in handling and preparing meats and meat food products, in connection with more or less post-mortem inspection; and also a sanitary method of disposing of the abattoir refuse.



If carried out along the lines of the federal inspection system, as far as applicable, such a system would, I believe, give reasonable protection to the community and meet with the general approval of honest butchers, because it would remove the suspicion that rests upon their meats.

On the other hand, if it is not deemed advisable to establish a state system of meat inspection, many advantages would follow the maintaining of municipal abattoirs among which may be mentioned: it would afford a sanitary place for slaughtering, a sanitary method of disposing of the abattoir refuse, and if properly located, it would be more or less under the observation of the people living nearby; it would give the butchers of small means the advantage of a sanitary place which he could not afford to construct for himself, and the janitor service would act as a check on nefarious methods.

In considering any proposition of as much importance as a state system of meat inspection, we should not at once expect to accomplish all that is desirable. The plans suggested contemplate a gradual change from existing conditions to a reasonably efficient system as rapidly as the public demands it.

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THE **R** you gave me for last year (AMERICAN VETERINARY REVIEW) was fine—in fact, don't see how any progressive practitioner can get along without it. Please find enclosed check for twelve months' refill. Thanking you in advance, I remain  
(*John E. Wilkins, Greenville, Tex.*)

PURE MILK WINS VICTORY IN COURT.—The tuberculin test for cattle and the Minneapolis milk ordinance prohibiting the sale of all milk not taken from officially inspected cattle, was held valid by Judge Frank C. Brooks of the district court, who denied the application of several milk dealers for an injunction restraining the city and Dr. P. M. Hall, health commissioner, from destroying their milk.

This is the first decision upholding an ordinance requiring milk to come from herds subjected to the tuberculin test ever entered either in Minneapolis or elsewhere, and is a decisive victory for the health department.—*Minneapolis Journal*.

## ROBERT KOCH AND HIS CRITICS AT THE INTERNATIONAL CONGRESS ON TUBERCULOSIS, WASHINGTON, D. C.\*

BY D. ARTHUR HUGHES, PH.D., D. V. M., INSPECTOR SUBSISTENCE DEPARTMENT, U. S. ARMY, CHICAGO.†

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On eight occasions there have assembled International Veterinary Congresses, attended by delegates from many countries, including the United States, and meeting in one city or another of Europe; the last at Buda-Pesth in Hungary, while the next will land. It is not an uncommon thing for veterinarians to confer, meet in the summer of 1909, at The Hague, the capital of Holland. It is not an uncommon thing for veterinarians to confer, thus congressionally, on international scientific topics. Before 1908 the case was different in assemblies of International Congresses on Tuberculosis. In 1901 in London and in 1905 in Paris, we had only a sprinkling of representatives, unorganized, and footless as to purpose. But experience in previous congresses had taught the managements that the liveliest question, exciting hot debate, interesting to all the world, becoming itself, in certain aspects unsettled, was the one of intercommunicability of animal and human tuberculosis. Hence, in the organization of the International Congress on Tuberculosis 1908, the important place of the veterinarian and veterinary work in the control of the disease was recognized by institution of a separate section for hearing of papers and discussion of the question of tuberculosis of animals and its relations to man.

The question of questions at the Washington congress was: What is the relation of animal tuberculosis to the human being? It was the main topic of the central day of the week when the congress was in general session, and it fully occupied the minds of numerous leaders, up till late in the evening preceding the

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\* An address, given by request, at the Twenty-sixth Annual Meeting of the Illinois State Veterinary Medical Association, Chicago, December 1, 1908.

† The author, by order of the Secretary of War, on recommendation of the Commissary General of the Army, officially represented the Subsistence Department in Section VII. of the Congress.

close of the sessions, the feelings of the congressists not being relieved until a unanimously passed resolution crystallized their judgment on the policy to be adopted in dealing with animal tuberculosis.

The question was precipitated by the presence of Koch at the congress and his willingness to discuss it. Not since 1901, in London, had he addressed an international congress on the subject; that time he astonished the world by his declarations that the chance of tuberculous infection by ingestion of meat or milk contaminated with bovine tubercle bacilli is so slight as to be a negligible quantity, that the rearing of legislation to prevent infection from animals was, therefore, unnecessary. Since that year there has been such a vast quantity of investigation on the question of inter-transmissibility, privately, by state laboratories and by national commissions, including that of Germany, and Koch's London pronouncement has been so searchingly criticised, that some men confidently expected a change of view on his part. They were disappointed.

Koch made statements in Washington, expressing his present position on the question on two separate occasions, and of these occasions I shall now proceed to speak.

#### I. KOCH'S PRONOUNCEMENT BEFORE THE WHOLE CONGRESS, SEPTEMBER 30, 1908.

By agreement of the central committee a joint session was arranged by section I., that on the pathology of tuberculosis, with section VII., that on tuberculosis of animals and its relation to man, to meet on the afternoon of the middle of the week when the work of the congress was chiefly carried on, for the purpose of threshing out the question of the relation of tuberculosis of animals to that of man with the hope, supposedly, that some general agreement might be reached as a basis of future work of hygienists. Instead of being a session of sections I. and VII., the meeting of September 30 turned out to be a general session of the whole congress, all surging into the large assembly

hall of the New National Museum to see and hear Koch make a public declaration of his present position on animal tuberculosis.

The hall, hung with gay flags of many nations, was thronged with an anxious crowd of workers against the disease. On the stage, this time, were not high officials of our national government, dignified ambassadors and legationers from other lands, bidding welcome to the congressists as at the opening joint session, but the great leaders of thought and investigation against the disease, particularly on the inter-relationship of human and bovine tuberculosis, at least such notables as attended the congress this year. Here were Theobald Smith and Ravenel, our American leaders; Adami, of Montreal; Sims Woodhead, of the University of Cambridge, he who headed the British Commission on Tuberculosis, and Nathan Raw, of the University of Liverpool; Arloing, of Lyons; Bang and Fibinger, of Copenhagen, and numerous other noted men, greatest of all his excellency Robert Koch himself. The audience was all thought, all eyes, with intense interest in what was to transpire.

Without further ado I will give the gist of Koch's contentions in 1908 by quoting two paragraphs from his Washington speech.

He said in part:

"The tubercle bacilli of the human type are characterized by the fact that they grow rapidly and abundantly in a thick layer on glycerin serum. They are virulent to guinea pigs, slightly virulent for rabbits, and almost non-virulent to cattle. The tubercle bacilli of the bovine type grow slowly and in a thin layer on glycerin serum, they are of equally high virulence to guinea pigs, rabbits and cattle. *To my knowledge the bacilli of the human type have never been demonstrated in cattle.* The bacilli of the bovine type, on the other hand, can occur in man. They have been found in the cervical lymph glands and the intestinal tract. With few exceptions, however, these bacilli are but slightly virulent for man and remain localized. The few known cases in which the bovine bacilli are said to have produced a general and

fatally progressive tuberculosis in man appear to me not to be above suspicion.

“One point which seems to me of high importance is that in all human beings who succumb to tuberculosis, eleven-twelfths die of consumption, or pulmonary tuberculosis, and only one-twelfth of other forms of the disease. One would have expected, therefore, that those investigators who are interested in establishing the relations between human and bovine tuberculosis would have searched for bacilli of the bovine type preferably in cases of pulmonary tuberculosis. This, however, has not been the case. Evidently animated by the desire to bring together as many cases as possible of bovine tuberculosis in man, they have investigated particularly cases of glandular and intestinal tuberculosis. In spite of the bias under which the researches hitherto have suffered, there yet remains at disposal a sufficient number of investigations of pulmonary tuberculosis to warrant a provisional expression of opinion. The gist of it is, that up to date in no case of pulmonary tuberculosis has the tubercle bacilli of the bovine type been definitely demonstrated. If on further investigation it should be established that pulmonary tuberculosis is produced by the tubercle bacilli of the human type exclusively, then the question will be decided in favor of the view that I have upheld and medical men must direct their attention and regulations for combating tuberculosis by all means primarily against the tubercle bacilli of the human type.”

With several important differences this is practically a reiteration of what he said in London in 1901, and partly repeated in the Nobel lecture in Stockholm in December, 1905. Koch has in nowise essentially changed his position. The German has never denied that bovine tuberculosis may infect man. In 1901 he denied the power of the bovine tubercle bacilli to infect the intestinal tract, except so rarely as to be called nil—nothing. He now admits that both the intestinal tract and the cervical glands of man may be infected by the bovine bacillus, though he throws cold water on enthusiastic statements that this is common. In

1901, he laid stress on his supposition that intestinal tuberculosis in man was very rare, arguing that tuberculosis by ingestion of meat or milk was practically a negligible quantity. He now emphasizes the statement that eleven-twelfths of the tuberculous population die of phthisis pulmonaris and that bovine tubercle bacilli have not been demonstrated in cases of human pulmonary tuberculosis in the expectorate or lung lesions. In 1901, his advice was against what he thought was expensive sanitary legislation aimed at protecting man from tuberculosis of bovine origin. He now makes no such statement and refuses to commit himself.

It must be remembered that what Koch would say was not known by the congress before he made his speech. Yet in the subsequent speeches, that memorable afternoon of September 30, written or extemporaneous, by Arloing, Theobald Smith, Sims Woodhead, Fibinger, Raw, Ravenel, representing France, Great Britain, America, Denmark, only Theobald Smith spoke mildly and hesitatingly in Koch's favor. Smith, however, stated that perhaps half of the cases of cervical and intestinal tuberculosis in children were infections from milk. Arloing stoutly maintained the doctrine of the unity of the tubercle bacillus and the equal danger of the infection from animal to man as from man to man. Sims Woodhead summarized the facts obtained by the Royal British Tuberculosis Commission in its work since 1901, especially the numerous cases of infant intestinal tuberculosis of milk origin found in Great Britain. Fibinger drew attention to the increase of infant intestinal tuberculosis in Germany since 1901, and believed this was due in part to the slacking of sanitary precautions. Ravenel reminded the congress that the German and British Tuberculosis Commissions, and he in America, had demonstrated bovine tubercle bacilli in the lesions of children dead of tuberculosis. He believed it incontrovertible that a fair proportion of children and some adults have shown bovine tubercle bacilli in lesions. He said he felt it would be a great misfortune if the opinion was noised about the country that it was the opinion of the congress that the proportion of human deaths due to the bovine tubercle bacillus was a negligible quantity.

The feeling at the close of the joint session, the afternoon of September 30, was that of dismay and dissatisfaction. Hence:

II. THE CONFERENCE ON THE RELATION BETWEEN HUMAN AND BOVINE TUBERCULOSIS AT THE NEW WILLARD HOTEL, WASHINGTON, THE EVENING OF OCTOBER 2, 1908.

By request of Professor Koch, and with the concurrence of the central committee of the congress, a conference of seventy-five leading investigators and sanitarians was held in the New Willard Hotel, Washington, in the form of a smoker for the purpose of coming to some common agreement and basis for future work. In order to bring things to a focus two questions were propounded by Koch. First, is bovine tuberculosis frequent in human beings? Second, whether or not it has been established that bovine tubercle bacilli are frequently expectorated by human sufferers?

The second question was put first and it appeared that search for bovine tubercle bacilli in the lungs and expectorate of human tuberculous patients had been much neglected, though not wholly, Arloing in France and Sims Woodhead in England having made such studies. Koch promised to make a study of this question during the next two years. But, as pointed out by Professor Adami, of Montreal, this investigation will likely be of no consequence, because there is already a general agreement among medical men that most of the tubercular infection of the human being is of human origin. Moreover, that most of human tuberculosis emanates in pulmonary tuberculosis. Koch's work will be of no practical value, as he will probably come to conclusions on which all are at present agreed. Adami also pointed out that all, including Koch, are agreed that a proportion of human deaths is due to bovine tubercle bacilli. He thought that they should urge the eradication of the disease in cattle as a work of economic importance and immediate practical value to human beings as well.

When the discussion of this second question was beginning to smolder, Dr. Herman Biggs, of New York, the chairman of

the conference, proposed the first question—the frequency of bovine tuberculosis in man. The meaning of this question came out more clearly in Koch's putting of it: How often does primary intestinal tuberculosis, or mesenteric gland tuberculosis, occur in children? This query resulted in a hot debate in which Koch, Sims Woodhead, Fibinger, Adami, Calmette, Tendeloo, Eastwood and Pearson participated. Smith, in a previous speech, had admitted the frequency of infant intestinal tuberculosis in America. Woodhead dilated on its relative frequency in Great Britain; Tendeloo its infrequency in Holland. An amusing part of the discussion was at that point where Fibinger, of Denmark, openly corrected Koch and administered him a mild chastisement for quoting from old out-of-date German statistical works to support his announcement that infant intestinal tuberculosis was infrequent in Germany. Professor Fibinger said: "Opinions vary greatly in regard to the frequency of primary intestinal tuberculosis, but the tendency seems to be more and more towards discovering that these cases are much more frequent than they were formerly believed to be. Dr. Koch has quoted a number pathologic anatomists and I will quote the same pathologic anatomists referring to the results that have been published in the last two years, whereas Professor Koch refers to their figures of an older period." Here Professor Fibinger gave a great deal of statistical data from German, English and Danish authors showing a marked increase in the number of cases of primary intestinal tuberculosis occurring in children and reported during the last few years.

Throughout the conference Professor Koch acted like a professor of dogmatic theology. He seemed to be firm in his scientific convictions and proposed to answer objections to his views. Neither the Germans nor the Austrians openly sided with him. His own countrymen remained speechless, colorless. He was in the congress and the conference clearly in the minority. At a late hour of the conference something that had the effect of broadside and looked very like a flank movement was sprung by



Dr. Eastwood of the Royal British Commission for the purpose of sensing the mind of those in council, that the expression of opinion might next day be voiced in a resolution of the congress. He proposed three questions, each to be answered by yes or no. They were:

1. Is the danger of bovine tubercle bacilli to human health so slight as to be practically negligible?
2. Does the consumption of milk containing living bovine tubercle bacilli cause a progressive amount of disease or death in children?
3. Is the obtainment of a milk supply free from bovine tubercle bacilli an object which will materially aid the crusade against tuberculosis?

Unfortunately nothing came of this proposition. Professor Koch refused to commit himself to replies of this sort; which, peradventure, there were an agreement, might be construed to be a resolution of the conference. In this he was twice strongly supported by the Chairman of the Central Committee of the Congress, Dr. Flick, who was present. The conference adjourned; no agreement was reached. The assemblage was apparently a fiasco.

### III. THE RESOLUTION OF THE CONGRESS IN GENERAL SESSION, OCTOBER 3, 1908, ON BOVINE TUBERCULOSIS AND ITS PRACTICAL IMPORTANCE TO US IN CHICAGO AND ILLINOIS.

A fiasco the conference was not. The drift of opinion in it had been sensed by the leaders, which was given expression in a resolution read next morning, the last day of the Congress, October 3, 1908, at the joint session of all the sections and approved. That resolution reads: "The utmost efforts should be continued in the struggle against tuberculosis to prevent conveyance from man to man of tuberculous infection as the most important source of the disease. Further, preventive measures must be continued against bovine tuberculosis, and the possibility of the propagation of this to man should be recognized."

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*Preventive measures must be continued*, these are the emphatic words. This resolution compares favorably with resolutions passed in London in 1901, and in Paris in 1905. It requires a continuation of existing sanitary policies of prevention and stands rather for than against their improvement.

The resolution of this congress of the world's authorities on tuberculosis has an important practical bearing on our policies for prevention of the disease in Chicago and Illinois. In my own speech at the congress I strongly emphasized the necessity for precautionary sanitary legislation against animal tuberculosis, pointed out the wide differences between the laws against the disease in the several states, the unwise varieties of policies, and methods whereby harmony could be made out of disharmony. Nevertheless each state is a unit in itself; it has its own sanitary problems to master and must work on its own sanitary policy with fear and trembling. What our present policies are, you know well, their present usefulness or future serviceableness. If I mistake not the meaning of the regulations of the State Board on Tuberculous Cattle and Swine, adopted September 1, 1908, we intend to curb, professionally, the previously uninterrupted spread of the disease among our herds. We intend to stop boldly by state meat inspection rulings the promiscuous sale of carcasses badly infected with tuberculosis in the numerous counties of the state. The improvement of these and other sanitary schemes will require our united action when the hour comes for new legislation, for precautionary sanitary purposes, against tuberculosis and other animal diseases. Let us stand fast in the resolution to further these ends, and having done much, stand together for still more improvement.

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THE SILVER ANNIVERSARY OF THE VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY at Atlantic City, July 15 and 16, was a marked success, both in attendance and the character of the program, to say nothing of the unusual social features. A report of it will appear in the next issue of the REVIEW.

## THE USE OF TUBERCULIN IN MAN.\*

BY DR. H. L. TAYLOR, OF ST. PAUL.

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Probably the most interesting thing in the history of tuberculosis was Koch's discovery of the bacillus of tuberculosis in 1882. Few things have interested the scientific world and the world of medicine as much as this discovery of the bacillus, although waited for a long time, and looked for by many investigators, unless it might be the announcement that came eight years later that Prof. Koch had discovered a cure for the disease of tuberculosis, which he had manufactured from the cultures of this bacillus and which he named tuberculin. In 1890 when this message was telegraphed around the globe, men started from every quarter as soon as they found that this remedy could not be secured by ordering it. It was one of the most spectacular things that has ever happened in the history of medicine—that flocking of men from all quarters of the world to Berlin. After going there, and with much trouble, they secured small quantities of this agent and returned to their homes. You all know what happened. The announcement had been forced from Prof. Koch by the German Government, because they were afraid that some one else might announce it sooner.

As we all know, scientific discoveries are usually happened upon by two or three people at the same time. It is not that any one man makes a great discovery, but science has advanced to such a point that this is the logical sequence. In order to secure this, Koch's announcement was made prematurely, before it had been investigated and its qualities known. The result was that many of these men, not scientists, took their tuberculin, returned home and began its use upon all kinds of cases, chiefly upon those that were thoroughly hopeless, with the result that they were hurried to their graves in great numbers.

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\* Read before the Minnesota State Veterinary Association at St. Paul, January 13, 1909.

The natural reaction followed, and when people found that their expectations were not realized and that this remedy, this cure, this specific for tuberculosis, was not going to cure cases that already had a foot in the grave, they took the opposite standpoint, and there were very few men with the courage of their convictions to continue the use of their remedies or to speak a good word for it. There was plenty of authority for the objections they made.

The advanced cases treated in the hospital at Berlin by Koch and his students came to the post-mortem table and fell into the hands of Prof. Virchow, a name of authority wherever it was heard. Virchow and Koch were never very good friends and you know professional jealousies are hard things to overcome. Virchow claimed that the disease was disseminated by tuberculin, and that it was an exceedingly dangerous remedy, and this coming from such a man as Prof. Virchow, carried much more weight than anything else. The result was that there were very few men who cared to carry on the investigation and use of tuberculin.

You know Prof. Koch explained that it had a specific action upon the living tubercle tissue, that it had no action upon the caseous centers and old tubercular foci, and that its action was entirely limited to the actively growing tubercular tissue. That it caused necrotic action to take place in the periphery of tubercular areas and checked its advance in this way.

Following this course there were fibroid tissue thrown out and tubercular areas which do not communicate with external parts and cannot be thrown off from the body, are encapsulated and cut off from all influence upon it. This explanation accounted for the reaction. You know that when the remedy was first used, Prof. Koch insisted that it was necessary to have a reaction after each injection if the patient was to receive the benefit from the dose. And it was this reaction with the high fever that followed it that was responsible for the acute dissemination of tuberculosis that Virchow found upon the post-mor-

tem table, if his recent tubercles were really a dissemination and not simply the condition we might expect to find in any case of tuberculosis in the latter stages which advances rapidly and in which we would naturally expect to find areas of recent tuberculosis.

Koch gave us his original tuberculin, the tuberculin known as the old tuberculin in 1890. This tuberculin is the one that you use to-day, that we all use in our diagnostic work, both in animals and man. In 1897 he gave us the new tuberculin which he called the tuberculin rest or the precipitate found in the bottom of the tube after the tubercle bacilli were extracted. The scientific world had discovered that the endo-toxins, that is, the toxins found in the bodies of bacilli in different diseases were just as important as toxins produced during their living activities. Tuberculin is really a collection of the toxins produced by the living tubercle bacillus, the toxins that are thrown off during its growth. The culture media is taken, as you know, and filtered and this filtrate which is dried to a certain concentration is tuberculin, and contains some of the more readily soluble endotoxins, possibly because many of the tubercle bacillus have been dead in this for some time before it is filtered, but chiefly the toxins produced by the tubercle bacillus during its life cycle. But the tuberculin he gave us in 1897 contained also the endo-toxins, but not the entire body of the bacillus. In 1901 he gave us his new tuberculin and he proposed that we use the entire body of bacillus. The tubercle bacillus in 1901 was ground up in an agate mortar and this residue was extracted.

This grinding was also done in the tuberculin he gave us in 1897. But the tuberculin of 1901 contains the entire body of the tubercle bacillus. Unfortunately this tubercle bacillus emulsion which he gave us in 1901 was soon discovered to contain living tubercular germs, and the methods of its manufacture had to be considerably changed. The objection, of course, to the use of dead or living tubercle bacillus was that we were introducing into the body organisms that were dangerous. The dead

tubercle bacilli usually, if in any large number, produces an abscess at the point of injection. In addition to all these tuberculins which Koch has given us, and all of these tuberculins contain the same active principle, we have had almost innumerable modifications. Denny gave us one, and Klebs gave us his antiphrthisin and purified tuberculin in which he attempted to remove chemically certain agents from tuberculin. The serious question was, that if he did not remove at the same time the therapeutically active agents, as well as agents causing fever?

Van Ruck in his North Carolina sanatorium, and where he had Klebs associated with him for years, has given us the watery extract of the tuberculin bacillus. This fulfills all of the indications of bacillary therapy without giving us any of the germs themselves, because his preparation is filtered through porcelain before it is used. He also grinds his bacilli in an agate mortar to a very fine state of pulverization and extracts the powder for months before the preparation is finished. It is then standardized and used as a therapeutic agent, but it can also be used as a diagnostic. We do not know the exact method of using it as well as we do that of the old tuberculin for diagnosis.

Of recent years there have been many changes in the views of the profession in regard to the action of the tuberculin, and why it is that we have this reactive fever which comes on after the injection of the dose of tuberculin. Wright, in England, with his investigation of opsonins has shown us that this biological process which is accountable for fever and which does about a certain degree of immunity in the patient that is given tuberculin therapeutically. Unfortunately the immunity that is acquired by the patient is not an absolute immunity against the bacillus. It is a toxin immunity only and while this toxin immunity will control the action of the bacillus and will give a man immunity for a number of months, it is not permanent; but during this time the individual has opportunity, if under proper conditions of taking care of himself, and is put in a position during which time the original powers of the body assert themselves and the

resisting power at this time can get in its best work because the activity of the bacillus of the disease is thoroughly checked during this time. The truth of this immunity and degree of it is shown by the agglutination which takes place in the blood of the person treated by the tuberculin. Wright claims that after an injection of tuberculin we have first a negative phase, then a positive phase, or a fall and rise of the resisting powers. He wants the blood of tubercular patients being treated with tuberculin examined constantly and when this positive phase begins to diminish, when agglutination is not as marked as before, then it is time for the next injection. Theoretically this is a very beautiful demonstration of the immunizing powers of tuberculin and it gives those of us who have long used the remedy a great deal of comfort, since we have been told, that we are doing more harm than good and that we should not be allowed to use this remedy. It is, however, practically impossible to carry out these examinations of opsonins, for if a man has a number of patients he would have to have a large number of assistants to work on the blood, and another unfortunate point is that the technique of this work is not so thoroughly understood but that the very best operators will get variations of 10, 15 and 20 per cent. in examining the same blood.

Of course, when they have an error, they throw it out and make another examination. There are very few people who could afford to hire a bacteriologist and keep him at work during the year or so, that they were trying to overcome this disease, but it does, however, show the fact that there is an immunity which is produced by tuberculin, and which can be demonstrated by laboratory methods. Another thing is production of hypersensitiveness, in which the body sensitized by doses of tuberculin reacts violently to the repetition of same dose, and if the remedy is continued, the doses even very much diminished, a reaction still comes on until this period of hypersensitiveness has been passed over.

There are also other laboratory methods of showing immunity, which I am really not competent to explain, as I do not know very much about them.

The use of tuberculin has now become almost universal, that is in every country and city there are people who are competent to use tuberculin and it is used to a great extent. Personally, I have used it since 1893. In 1890 a friend of mine in Asheville, N. C., went to Berlin and came back with three or four cubic centimeters of Koch's tuberculin and he used it. Even at that time had begun using it in small doses, not following the directions of Koch and his school that it was necessary to produce a reaction. He had seen bad effects and had decided that he would not subject his patients to such unpleasantness. He began using it and avoiding reactions, and it was my privilege to watch his cases and I was so thoroughly convinced after watching it, that I began the use of it in 1893 and have used it ever since. It is used in this way: with very small and gradually increasing doses, avoiding reactions and lengthening the time between doses, watching the cases with a great deal of care, and I feel that I am just as safe in using the tuberculin as I would be with a corps of bacteriologists working after each dose, because after using any remedy for a number of years you become accustomed to it, of course, and feel safe. I feel we can use it with safety, depending on careful clinical control.

In abdominal tuberculosis Koch's original method seems to be the very best. I have seen many cases of abdominal tuberculosis apparently hopeless, that Dr. Boeckman has brought out by the heroic use of tuberculin.

In using it for pulmonary tuberculosis I was very much prejudiced against these reactions, but Dr. Boeckman went at it and did not hesitate to double up his doses, giving it once a week and expecting patients to be in bed three days; but the result has justified the means.

In tuberculous conditions that are so frequently found in the eye, it has also demonstrated its usefulness. Many cases of tubercular keratitis were not suspected before the use of tuber-



culin. Many a man's eyesight has been restored to him by the use of tuberculin in these cases of chronic keratitis, in which reactions are not necessarily to be avoided and not as dangerous as in pulmonary tuberculosis.

In surgical tuberculosis, of course, the surgeon is still the master; and surgical tuberculous lesions can be operated upon when all of the diseased tissue can be taken away. This does not, in my mind, include tuberculosis of the glands of the neck because when the surgical glands are enlarged the bronchial glands are very apt to be enlarged, and the surgeon cannot remove these enlarged glands. Consequently he does a partial operation, and partial operations, as we all know, should be avoided at all times. The use of tuberculin in these chronic gland enlargements has given a great deal of satisfaction, the glands decreasing in size, becoming fibroid and remaining as small knots under the skin. If they recur a second course of tuberculin can be given. In this way the scars are avoided, and I have seen cases operated on six times and in which glands recurred.

In tuberculous glands tuberculin is very much better than the surgeon's knife.

I believe that in cattle tuberculin has been used as a diagnostic agent almost from its inception. I know that in 1896, at an international congress at Berne, it was highly recommended and its accuracy, I believe, is now generally accepted the world over. I presume you have failures in cattle as we have in people, but in the vast majority of cases the diagnostic efficiency of the dose of tuberculin is one of its triumphs. I have used, as I have said, this tuberculin since 1893 and I have been abused for doing so, but at the present time we cannot pick up a medical journal in which encomiums of tuberculin are not readily found. Now that we have overcome the first outbursts against the use of tuberculin completely, the value of tuberculin will be more and more recognized. At the same time it is a dangerous remedy. I do not believe because a remedy is dangerous it should not be used, because we all have to deal with poisons, and the only thing is to thoroughly understand the use of same in order to get the results.

## CITY MILK AND MEAT INSPECTION.\*

BY DR. E. H. NODYNE, FULTON, N. Y.

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My purpose to-day is to bring before you the more or less thread-bare subject of tuberculosis in cattle, and what may be accomplished by local health authorities to assist in the suppression of this disease, and consequently lessen the number of its victims in the human family, especially among infants; for it has been conclusively proved in a number of instances that the mortality among children from birth to one year of age can be greatly reduced by furnishing them with milk from healthy cattle and sanitary dairies. You are all familiar with what the federal and state authorities are doing in this direction, but I think you must agree with me when I say that their efforts will never be thoroughly effective until they have the assistance and co-operation of the local boards of health, and through them the education of the dairymen, to the end that they will see it is to their own advantage and financial interests to ascertain the condition of their herds, to remove all diseased animals, and then to keep their herds free from such; and when I say remove in reference to the ordinary dairy cattle, I mean by slaughtering. The Bang method is all right in high-priced registered cattle that will pay by breeding for the necessary time, trouble and expense required, but I do not think it at all practical among grade cows, and neither do I think it should be encouraged. I am going to relate as briefly as possible what our city board of health has done, the methods used and the results so far accomplished as I see it.

In the month of March, 1905, on the recommendation of the board of health, the common council of the city of Fulton created the office of Milk and Meat Inspector, and required that such inspector should be a graduate veterinary surgeon. I was

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\* Paper read at the annual meeting of the Genesee Valley V. M. A., Rochester, N. Y., January 7, 1909.

appointed to this office, rules and regulations were adopted, looking to the production and vending of wholesome milk and meat in the city.

The first year was devoted to the inspection of dairies, sampling of milk, inspection of slaughter houses, etc. During these inspections I came gradually to realize that tuberculosis was more or less prevalent, and of course when I detected the disease from a physical examination the tuberculin test was required, and from these tests I soon realized that physical examinations were really of little practical value, for many animals showing no evidence of disease on such an examination, would react when tested, and in many cases on post-mortem would prove to be quite badly diseased.

Finally our board in February of last year passed resolutions requiring all cattle furnishing milk to the city to be tuberculin tested.

Now you can imagine what we were up against; opposition sprang up from all quarters, and from various causes. Some of you gentlemen may have read in a certain farm publication articles written by a Dr. Smead in opposition to the use of tuberculin, and owing to this man's connection with the farmers' institute, considerable weight was given his statements that tuberculin was injurious to cattle and its use unnecessary in detecting tuberculosis.

Another cause for opposition was the fact that our board, while requiring the test, did not have any money to pay for it, and this made it necessary for the dairyman to pay for testing his own cattle; at that time we could get no assistance from the state, as there was no money appropriated for that purpose.

Some dairymen complied with the ordinance at once, others refused point blank to comply, while still others wished to wait until after the farmers' institute at Fulton; as this Dr. Smead before mentioned was advertised to speak on "Tuberculosis in Cattle." The board could not well object to this delay and so consented to wait until after the institute before enforcing the

test, except in the case of one milk peddler who owned a large dairy, this man came before the board and flatly refused to have his cattle tested, quoting Dr. Smead as his authority for refusing. His license was promptly revoked, and he as promptly concluded to submit. His herd was tested and proved to be entirely free from tuberculosis. We realized that if we did not do something to offset the Smead doctrine at this institute we would have great difficulty in enforcing the tuberculin test at all, as sentiment among the dairymen would be too strong for us. In the meantime, we carried on an active campaign speaking at Grange meetings and anywhere else where we could get an audience of farmers. Finally we communicated with Dr. Moore, of Cornell, and he very kindly consented to come to Fulton and address the farmers at the institute on this subject.

He came as agreed, and Dr. Kelly, State Veterinarian came with him, and practically the whole afternoon and evening sessions were given up to them, as the farmers were anxious to hear these gentlemen express their views. I wish to say right here that I think those present learned more about tuberculosis in those two sessions than they ever knew before. Dr. Smead, learning that Dr. Moore and Dr. Kelly were to speak at Fulton, did not materialize.

The results obtained in this way were most gratifying, as practically all opposition to the test was withdrawn, and we were enabled to go on with the good work.

Naturally the first tests made were those of herds we had reason to suspect, and in some of these the percentage of diseased animals was very high, but the average of all those tested by me the past year was 21 per cent., and I think this will still be about the percentage among the cattle, still untested in the vicinity of Fulton. For while over 50 per cent. of the herds tested proved to be free from the disease, some of the others were so badly affected as to make the percentage on the whole number pretty high though not near as high as is claimed by some other localities.

The following table will give you some idea of conditions found, but includes only those animals tested by myself, quite a number were tested by other veterinarians and some by the State Department of Agriculture.

|                                             |     |
|---------------------------------------------|-----|
| Number of cattle tested.....                | 457 |
| Number of herds tested.....                 | 36  |
| Number of herds free from tuberculosis..... | 19  |
| Number of herds diseased.....               | 17  |
| Number of cattle condemned.....             | 99  |
| Per cent. diseased.....                     | 21  |

Of the number condemned, by far the larger part were condemned last winter, and as you know the Department of Agriculture at that time had no money to pay for condemned animals, and our board, of course, could not compel their destruction.

However most of them were killed under inspection and probably two-thirds were passed as fit for market and the meat sold; the balance were destroyed, except in a few instances when the owner refused; milk from these herds was not allowed to be sold for city consumption. However this did not cause the owners any great hardships, as the local creameries, cheese factories and the milk stations shipping milk to New York City stood ready to take the milk without asking any embarrassing questions.

Now as to results obtained. At present our city milk supply is absolutely from none but tuberculin tested animals, except now and then a peddler owing to scarcity of milk at this season has had to take on a new dairy, in such cases if this consists of untested cattle, we require that they be tested within ten days, or that the board of health has the owner's written application for the test to be made by the State Department. In addition, our board has adopted the card system of scoring, requiring a score of 60 per cent. to admit the milk for sale in the city. They also require each dairyman to post in his dairy, a card 10x15 inches, containing the rules and regulations of the board of health governing the milk supply of the city.

Three years ago it was a rare thing to find a dairy that would score above 70, but at present there are very few scoring less than that, the larger part scoring nearer 80, a number between 80 and 90, and a few above 90; the highest score is 95. While we have no model dairies producing certified milk, I think our milk supply is above the average in the state, and I believe Fulton is the only city in New York State receiving only milk from tuberculin tested cows. However there are results extending beyond our city limits.

As I before stated, one result is to drive the owners of diseased and suspected cattle to take their milk to the creameries, cheese factories and milk stations. These places are no doubt at present receiving milk from a larger percentage of diseased cattle than ever before, and when they once awaken to the facts, they too will no doubt require closer inspection and accord less weight to the results of a physical examination. Another more favorable result is that our dairymen are becoming more cautious in purchasing cattle, doing so only when the animals pass the tuberculin test.

I believe there should be a law in this state similar to that of two or three other states, requiring all cheese and butter factories that return skimmed milk to the dairymen to first subject such milk to a degree of heat that will destroy the bacteria it may contain 180 to 185° F., as these places are at present a great source of infection.

Now while I realize that we have not a perfect system of milk and dairy inspection, still I think we have accomplished something, and I believe if a few other cities would go at the matter something after this fashion, that it would not be long before others would follow as a matter of self-protection and in this way tuberculosis in cattle would be much sooner stamped out, and many less lives sacrificed as a result of children partaking of infected milk.

As this is a subject in which I am deeply interested, I have taken considerable of your time to-day in the hope of getting

some new ideas from some of you gentlemen who I know have had a much wider experience in this work than myself.

I hope also to learn something on the subject of meat inspection, for I realize as does our board of health that our present system of meat inspection is very defective indeed.

In the first place the salary of the inspector does not allow of his giving sufficient time to meat inspection to make it effective, so long as so much time is necessarily taken up with milk and dairy inspection.

There are slaughter houses scattered all over the country, where they kill from one to ten or twelve animals a week, and while some are kept fairly clean and sanitary, and the owners would not offer for sale any meat that they thought was diseased, there are other places too filthy for description, where owners would not hesitate to sell anything from a beef carcass affected with generalized tuberculosis, to a pig that had died from hog cholera.

Of course the proper solution of this question would be for the city to build a public abattoir, where all animals to be sold for food within the city limits could be slaughtered and inspected at that time; but so far we have been unable to get the necessary appropriation but hope some day in the distant future to accomplish even this.

In the meantime the following rules have been adopted, to take effect the first of next April, in addition to those already in force.

All slaughter houses where animals are killed that are to be offered for sale as food within the limits of the city of Fulton must comply with the following rules and regulations:

First—The floor of killing room must be of cement, properly graded and drained and free from cracks.

Second—There shall be no hog pen within 100 feet of slaughter house.

Third—All hides, bones and litter of all kinds must be removed daily, and not allowed to accumulate in, around or under slaughter house.

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Fourth—Drainage must be provided to at least 100 feet from slaughter house.

Fifth—No blood or other body fluids shall be allowed to saturate ground under or around slaughter house.

Sixth—Slaughter houses must be at all times in a sanitary condition satisfactory to the veterinary inspector.

Penalty for violation of these rules shall be \$25 or revoking of peddler's license or both.

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CHARBON KILLS MAN.—The first death of a human being as a victim of the dreaded cattle disease, charbon, occurred June 26, when Theophile Eugene, a well-known Frenchman, of Sweet Lake, La., died after having skinned an animal which is supposed to have died from the disease. Eugene is said to have found one of his cows dead near his home at night and proceeded to skin the animal in the morning. In some way the fatal germs got into his system.

THE following clipping from the "Publisher's Desk" column of *The Rural New Yorker* of July 17, 1909, indicates the relationship that is constantly growing more mutual between veterinary medicine and agriculture; and is also characteristic of this wonderful little agricultural paper, that is ever alert to protect its readers and the public generally from fraud:

"A neighbor's son, whose health demands light labor, has an offer from the Ontario Correspondence School of Veterinary Science, London, Canada, to sell books at \$3 each, and memberships. When he has sold these books and memberships they are to start a branch office here with him as head of the office. Do you know this firm? Are they all right, or are they as we suppose—swindlers? They have a branch office at Detroit, Mich.

G. K.

"Yes, we know them. They have worked this game for years. Of course, the branch office proposition is a fake. They make it as an inducement to get the boys to sell the books. Their correspondence course is a dangerous thing at best. Their so-called certificates have no standing in any of the states, and would not entitle anyone to practice veterinary medicine."



## ACTINOMYCOSIS.\*

BY DR. W. L. MEBANE, BANGOR.

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Actinomycosis (akrts ray uvkns fungus) or Ray Fungus Disease is a form of wound infection manifesting itself by the anatomical changes of a suppurating granulomatous inflammation; it may be caused by several varieties of a group of fungi known as the ray fungi or actinomycetes. It occurs not infrequently in man, cattle and swine, and has been exceptionally observed also in sheep, hart and roe deer, dogs, cats and elephants.

The fungi which cause the affection were first discovered by Langenbeck in 1845 in the carious lumbar vertebræ of a man; later by Rivotta in 1868 in tumors of the jaw in cattle and by C. Hahn in 1870 in the tongue in cattle, and have been more fully investigated by Bollinger, Harz, Johne, Israel, Ponfick, Gasperini, Berestnew, Bostrom and others. They have wide distribution in nature existing especially in field soil and the beards of cereals. The usual mode of infection by the ray fungi is through wounds made by small foreign bodies penetrating into the skin or mucous membranes; as sharp spicules of grain or other stiff particles of food to which the fungi are adherent or they may gain access to the tissues through scratches and similar lesions of the skin. Examples of such mode of infection are common. Persons who put heads of grain into their mouths or who accidentally swallow portions of such heads, or who have been injured while harvesting, have been known to develop at the points of injury (gums, throat, hands) actinomycotic abscesses and growths. Swine pastured in stubble land, where their teats are easily wounded by the stiff straw stubble, are not infrequently known to develop actinomycosis of a mammary gland. Cattle frequently show actinomycosis of the tongue, gums, or lips, along with the presence in the tissues of spicules

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\* Read before the M. V. M. A., April 14, 1909.

of grain or other food materials which have been forcibly lodged in between the teeth in the pharynx, etc. Occasionally in castration the fungi from the straw of the bedding get into the operation wound and set up actinomycosis of the stump of the seminal cord and scrotum (for details of, Schlegel and Kitt). The occurrence of actinomycosis occasioned in some such accidental way (pasturing in stubble fields) has been more frequently observed than an actual epidemic affection (Bang C. O. Jensen Preusse).

Transmission of actinomycosis from one animal to another or to man is very improbable; the few alleged cases of such an occurrence which have been recorded in literature might equally well have been caused by traumatic infection; artificial transmission by inoculation has been successful only in a few cases (Johne, Wolf and Israel, Ponfick and others), and in these the experiment animal had to receive rather deep inoculation with comparatively large amounts of the infectious material (intra-peritoneal subcutaneous injection); while in ordinary wound infection and feeding, transmission failed completely.

The anatomical changes brought about by the actinomycotic infection include the formation of actinomycotic nodules, abscesses and fungous granulomatous proliferations, sometimes accompanied by indurative connective tissue proliferations.

The actinomycotic nodules (actinomycosis nodularis) are small inflammatory foci of the size of a millet seed to that of a pea, yellowish-red or grayish yellow in color, composed of a soft granulation tissue which is developed as the product of a demarcating inflammation about the fungus which acts as a foreign body; they show one or a number of opaque yellow punctiform spots from the presence in minute foci within them of the yellow-colored clumps of fungi and pus cells. When they are in the parenchyma of an organ, they are surrounded by a connective tissue zone of induration; when on mucus surfaces they break through and project somewhat.

Actinomycotic abscesses (actinomycosis purulenta apostematosa) are areas of softening from the size of a plum stone to

that of a human head, with purulent contents, which either appears as a thin, mushy fluid, creamy and of a sulphur yellow color, enclosed in a white indurated abscess wall, or the areas are made up of a flabby grayish-yellow to reddish-yellow matrix, which contains the infiltrating pus; not in separate foci large enough to allow it to be taken out in a spoon, but just as though it were in a fine sponge; in the latter case there is no real abscess membrane present although the surrounding tissue for some distance is converted into an indurated dense white connective tissue.

The fungous actinomycosis growths (actinomycosis fungosa) look like mushrooms or soft cushions, projecting above the surface of the skin or mucus membrane. They are more or less pedunculated growths, varying in size from that of a nut to that of a fist; covered with blood and pus and crusts with an elastic, soft consistence, on section looking like bacon, grayish-white or grayish-red and thickly beset with points of suppuration or the described flabby yellow patches of softening.

All three of these forms may occur together and pass into each other. For example, after rupture of an abscess the granulomatous proliferation springs up and grows out as a fungous mass, or the small nodules, because of the progressive multiplication of the fungi become confluent and form the larger flabby areas of softening; or the bacon-like connective tissue growth prevails and this causes more or less marked induration of the organ.

The most characteristic thing about the actinomycotic growth is the fungus. This may be recognized even by the unaided eye as minute granules the size of a sand grain, soft like tallow or sometimes of a chalky consistence, of a sulphur-yellow color or white; they may often be present in large numbers in the softened areas and the pus from this may sometimes have an almost sand-like gritty consistence. Under the microscope the fungi may be discerned in unstrained preparations as strongly refractive, gray or shining yellow clumps of club-shaped filaments arranged in the form of a rosette (Fungus Glands); in strained

sections the filamentous intricately branched mycelium forming the matrix may be seen and the clump with its budding elements swollen into club shape and growing out from the periphery in radiating fashion. The clumps of fungi are always surrounded by leucocytes in the fatty and granular detritus; sometimes, too, with here and there a giant cell. About this central, softened focus proliferating fibroplastic tissue is formed, vascular and full of emigrated leucocytes, as a zone of varying width.

Actinomycosis is primarily a local affection running a course of months or years in duration. As the fungi penetrate the lymph spaces and are carried to new positions, fresh eruptions in multiple foci of inflammation along the lymph vessels and in the lymph glands arise with purulent softening and coincident production of new tissue in the soft parts and in the bones. By hæmic convection also the process may become a general one. A number of organs, bones, etc., becoming synchronously or one after another involved. [In cattle one of the most common and characteristic results of actinomycotic infection is that seen in involvement of the jaw, which may well illustrate many of the features of the disease. The infection here is supposed to take place by the penetration of a small spicule of grass or beard of grain into the gum along the root of the tooth; such a foreign element having upon it the actinomycotic fungus. In unknown ways the fungus penetrates along the root well into the alveolar process of the jaw, and there produces the small nodules above described, each undergoing central softening and disintegration, and being surrounded by a zone of new tissue formation at its periphery. Gradually the process loosens the teeth; and as they are elevated in their sockets by the inflammatory tissue and chewing becomes painful, the animal stops eating. Sometimes the teeth are forced up so that the animal is unable to close the mouth without pain and the teeth may even be lost. The process gradually spreads throughout the alveolar bone and into and through the whole thickness of the jaw. The inflammatory change about each nodule at first causing absorbtion of the cal-

careous matter, and thus giving the fungi a chance to spread in this softened tissue. As each nodule grows older the formative tissue at its periphery produces new bone; and from the coincident operation of the two factors of bone destruction and bone formation the jaw becomes enormously enlarged ("Big Jaw"), riddled with the small points of softening representing the different actinomycotic foci and with fistulous paths running all through the mass, connecting these points of disintegration. The jaw may thus have developed within and upon it, a tumor-like mass the size of a double fist or much larger, composed of a coarse framework of newly-formed bone like a coarse calcareous sponge, the meshes of which are occupied by the actinomycotic nodules and their purulent matter. Fistulous sinuses discharge upon the surface and into the mouth; and in the purulent material are to be seen the tiny yellow sand-like grains, known as sulphur grains, consisting of the fungi themselves. The animal may die from starvation, the process may extend along the ramus of the jaw to the base of the skull and gradually advance by the same changes through the latter and cause death from a purulent meningitis; or the fungi may be carried along the lymphatics of the neck to the thorax, producing an actinomycotic pleurisy and entering the lung to cause fibrosis and purulent destruction to these organs. Occasionally the fungi, swallowed with the discharge into the mouth, give rise to alimentary actinomycotic abscesses.]

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THE BAYSHORE HORSE SHOW, at Bayshore, L. I., the third week in July, proved a marked success, both in attendance and the quality of exhibits. Evidently the horse has in no way lost his old time faculty of attracting elite audiences.

THE first meeting in the Grand Circuit for 1909 opened at Detroit, Mich., July 26th, with most of the high-class trotters and pacers of the country in top-notch training. This will be one of the most important events of the year, and will continue for five days.

## WHAT IS THE NORMAL TEMPERATURE OF CATTLE?

By E. C. L. MILLER, M. D., DETROIT, MICH.

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As is well known, the temperatures of apparently normal cattle vary within unusually wide limits:

Dr. Dinwiddie (1) says, "It varies from  $99^{\circ}$  F. up to  $102.5^{\circ}$  F."

Dr. Wm. H. Lowe (2) says, "The normal temperature of the bovine is from  $100^{\circ}$  F. to  $102^{\circ}$  F."

For practical purposes it does not matter much what the lower limit of this variation is, but it is important to know the upper limit, as this marks the line between normal and febrile temperatures. This is especially important in the Tuberculin test, as all are agreed that an animal with a febrile temperature should not be tested. The question at once arises, what is a febrile temperature?

Dr. Law (3), speaking of the Tuberculin test, says, "Cattle having a temperature of  $103^{\circ}$  F. or above are not favorable subjects for the tests except in the case of calves, in which the temperature is normally high."

Dr. Winslow (4) says, "The test (Tuberculin) is unreliable in animals whose temperature reaches  $103^{\circ}$  F. during the period prior to the injection."

The Royal Prussian Edict of the 29th of October, 1900 (5), states: "Those animals are to be classed as having reacted and, therefore, as probably tuberculous, whose temperature before the injection does *not* exceed  $39.5^{\circ}$  C. ( $103.1^{\circ}$  F.), and whose temperature after the injection *does* exceed  $39.5^{\circ}$  C. ( $103.1^{\circ}$  F.), provided there is a difference of, at least,  $1^{\circ}$  C. ( $1.8^{\circ}$  F.) between the highest temperature before and the highest temperature after the injection. In calves up to 6 months of age, the standard is as above, except that  $40^{\circ}$  C. ( $104^{\circ}$  F.) is taken instead of  $39.5^{\circ}$  C. ( $103.1^{\circ}$  F.)."

In Huttyra and Marek's new work (6), which is, perhaps, the best thing ever published on veterinary pathology and therapy, is the following: "All animals more than six months old are to be considered tuberculous:

"(a) Whose highest temperature after the injection exceeds the highest temperature before the injection by  $1.5^{\circ}$  C. ( $2.7^{\circ}$  F.).

"(b) Whose highest temperature after the injection exceeds  $40^{\circ}$  C. ( $104^{\circ}$  F.) with a difference of, at least,  $0.5^{\circ}$  C. ( $0.9^{\circ}$  F.) between the highest temperature before and the highest temperature after the injection.

"(c) Whose highest temperature after the injection exceeds the highest temperature before the injection by  $1^{\circ}$  C. to  $1.4^{\circ}$  C. ( $1.8^{\circ}$  F. to  $2.5^{\circ}$  F.) or, at least, exceeds  $39.5^{\circ}$  C. ( $103.1^{\circ}$  F.), provided the animals also exhibit an organic reaction.

"(d) In calves under 6 months of age a rise of temperature is not to be considered positive for tuberculosis unless it exceeds  $40.5^{\circ}$  C. ( $104.9^{\circ}$  F.)."

From these quotations, it appears that in America  $103^{\circ}$  F. and in Germany  $103.1^{\circ}$  F. are taken as the dividing lines between normal and febrile temperatures in animals more than 6 months old.

Examining the records of Parke, Davis & Co.'s Biological Stables for several years back, it seemed desirable to tabulate the temperatures there found. All animals used by them for the production of vaccine virus are first subjected to the Tuberculin test. The stables in which they are kept are large and comfortable and there is nothing in their surroundings to cause any disturbance in temperature. In tabulating the temperatures, only such animals were utilized as were subsequently used for the production of vaccine. Animals rejected for any reason were not taken. This was to insure that the temperatures here recorded were of animals at that time considered entirely normal. All the cattle were more than one year old and less than two and one-half years. In the case of animals that successfully passed the Tuberculin test, the records show just two temperatures, viz., the highest before injection and the highest after

injection. The following table shows the highest temperatures before injection and the number of animals exhibiting each temperature.

TABLE.

|                                        |         |                      |
|----------------------------------------|---------|----------------------|
| 12 cattle had a maximum temperature of | 101.0°  | F. before injection. |
| 16 " " " " "                           | 101.2   | " " "                |
| 18 " " " " "                           | 101.4   | " " "                |
| 130 " " " " "                          | 101.6   | " " "                |
| 200 " " " " "                          | 101.8   | " " "                |
| 402 " " " " "                          | 102.0   | " " "                |
| 265 " " " " "                          | 102.2   | " " "                |
| 379 " " " " "                          | 102.4   | " " "                |
| 298 " " " " "                          | 102.6   | " " "                |
| 185 " " " " "                          | 102.8   | " " "                |
| 266 " " " " "                          | 103.0   | " " "                |
| 190 " " " " "                          | 103.2   | " " "                |
| 36 " " " " "                           | 103.4   | " " "                |
| 2,397 " had an average max. " " "      | 102.395 | " " "                |

The table shows that the temperatures of perfectly healthy cattle, even when kept under favorable conditions, may range up to or even above 103° F. The chart shows distinctly that there is no great falling off in numbers till 103.2° F. is passed. In fact, 20½ per cent. of these cattle have a temperature of 103° F. or above, 39½ per cent. are above 102.5° F., and 64 per cent. have a temperature of 102° F. or above.

These are highest temperatures and, hence, do not adequately represent the average run of temperatures in cattle. They are not greatly out of the way, however, as is shown by the fact that the average of all these temperatures is 102.395° F., while Muir & Ritchie (7) give the average temperature in cattle as 102.2° F.

These records show that in looking on 103° F. as a febrile temperature, we are being rather too conservative, as even 103.2° F. is found in a large number of entirely normal cattle.

1. Proceedings of the Amer. Vete. Med. Association, 1900, p. 231.
2. Special Report of the Diseases of Cattle, from the Bureau of Animal Industry, 1904, p. 88.
3. Text-book of Veterinary Medicine, by Jas. Law, 1902, Vol. 4, p. 463.
4. Veterinary Materia Medica and Therapeutics, by Kenelm Winslow, 3d ed., 1905, p. 748.
5. Lehrbuch der Spec. Path. und Therapie der Haustiere, by Friedberger and Frohner, 6th ed., 1904, Vol. 2, p. 356.
6. Spezielle Path. und Therapie der Haustiere, by Hutyrá and Marek, 2d ed., 1909, Vol. 1, p.
7. Manual of Bacteriology, by Muir and Ritchie, 4th ed., 1907, p. 259.



## OUR ADVANCE; SOME SUGGESTIONS.\*

BY F. M. PERRY, HOULTON, MAINE.

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Mr. Chairman, Gentlemen: Our society, the Maine Veterinary Medical Association, was organized in 1892, and though now sixteen years old, strange as it may seem to most of us, is even now little known to the people of our state. Searching through the lists of the various societies which are annually printed in the Maine Register, the name of this society does not appear. There are The Improved Order of Red Men, Maine Elks, Anti-Saloon League of Maine, Association of Opticians, Eclectic Medical Society, Maine Osteopathic Association, and many others, but no Maine Veterinary Medical Association appears there. Now this condition of things should no longer remain, and while doubtless the above-mentioned societies are all worthy societies; are all worthy associations, ours is certainly no less so, and it is for the purpose of affording a few suggestions that may help to make us and our organization better known and more appreciated that this humble paper is presented.

If correct in my diagnosis, I should say that our sins, if any, are sins of omission rather than of commission. We have left undone those things which we ought to have done; thus we have been weak in numbers till of late years, when now we number some forty members all told. Twenty years ago there were only two or three qualified men in the whole state. At that time most any man who had "always been around horses" or cattle was called in to give relief or effect cures, and sad to say many of our citizens have not gotten over the habit yet.

About that time the Maine Cattle Commission was organized for the purpose of controlling and eradicating contagious diseases of animals—a commission composed of laymen, bear in mind, with the exception of one veterinarian, the latter of whom

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\*Presented to the Maine Vet. Med. Assn., at Augusta, Jan. 13, 1909.

presumably had little influence in enacting rules according to scientific principles. How suitable or effective such a commission may have been at that time, it is clearly inadequate now, and its continued existence is not at all flattering to our profession or our association.

According to the rules of the commission only the control and eradication of tuberculosis and glanders is attempted, and that, too, in only a spasmodic way, whatever the reasons therefor may be, while we veterinarians sit in the background or do a little testing, and wait till next year for our pay, and have no voice in the administration of the work.

According to the last census there are in Maine approximately 340,000 head of cattle. How many of them have been tuberculin tested? How many dairies have we inspected? How many hogs have we immunized against cholera? What other states are doing has little bearing upon the question. How often have we been consulted regarding large matters of veterinary sanitation in Maine? Maine herds are alleged to be comparatively free from tuberculosis. How much do we know of the real facts of the situation? Are we justified in resting content until they are practically free from this scourge? Someone has described the up-to-date veterinarian as being in reality a veterinary engineer, which would imply his ability to direct as well as to execute in detail; also, as already touched upon, the irregular practitioner is still abroad in the land, and strange to say finds favor in many parts of our state, due perhaps to the fact that we do not assert ourselves, and make our presence and usefulness felt as we should; also, strange as it may seem, even our agricultural press from time to time takes opportunity to malign and discredit the veterinarian and the tuberculin test; but perhaps enough has been said to express somewhat correctly our present condition, and assuming this to be so, now for the remedy.

In the first place, it is for us to decide whether we are simply doers of odd jobs from day to day, as are plumbers or cobblers, or whether we are professional veterinary engineers capable of controlling and stamping out contagious diseases, conducting dairy.

inspection, etc., or doing any veterinary work which our state needs to have done. If of the latter class, then it seems to me that we should present a solid united front as a profession and a society and petition our legislature to abolish the present obviously incapable cattle commission, and in its stead place the most capable veterinarian to be found willing to accept the position, and then give him full power to work to control and eradicate any and all contagious diseases of animals found in our borders.

The legislative committee must be impressed with the importance and necessity of a large appropriation in order for the veterinarian in charge to prosecute the work constantly and with vigor and to adequately pay his assistants; also an act ought to be created to restrict the sale of tuberculin and mallein to qualified veterinarians only. Let every veterinarian provide himself with a list of the names of every dairyman or owner of animals in his district; then he should have his own name on the mailing lists of the United States Department of Agriculture and the various experiment stations; get as many of these circulars and pamphlets as possible bearing upon diseases of animals, dairying and animal husbandry, and mail one each from time to time to those on the home list. Not only start this campaign of education, but keep it up. Many of our clients may not read them at all, but some will, and an increasing number will be won over to having the health of their animals safe-guarded by a scientific man.

It might not be out of place for each sender to provide himself with a rubber stamp, bearing the words, "Compliments of Dr. . . . .," for example, and have each piece of literature sent out so stamped. Those members living in dairy districts and in the vicinity of granges should offer their services gratis, as speakers on some veterinary topic at public meetings of that order, though in some such ways as above we might make our influence felt and gain the confidence and respect of the public for our knowledge of the various subjects within our own field. At such meeting would be a grand opportunity to answer

questions and clear up misconceived notions and enlarge acquaintanceship.

The following out of these suggestions offered may not appear to all of you to constitute a remedy that will effect an immediate cure, but, gentlemen, it seems to me that such measures, if faithfully carried out and followed up, would certainly help us in our advance all along the line of veterinary work, broaden the field of our usefulness to the state, bring to the public the real value of the trained man over the empiric, our ability and willingness to serve, and thus earn the resulting confidence and respect and also the responsibilities of public sanitation that are all ours by right, and so make our influence and the influence of this association felt throughout the state.

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DR. J. OTIS JACOBS, Resident State Secretary for Nevada of The American Veterinary Medical Association, has opened a new veterinary hospital in Reno, and is enjoying a good practice.

DURING July, Prof. Liautard entertained at his home in Paris Dr. James B. Paige, of Amherst Agricultural College, Dr. W. H. Dalrymple, late president of the A. V. M. A., and one or two other prominent American veterinarians, and speaks of the great amount of pleasure it has afforded him.

JUST as we are closing our forms, we are in receipt of circular No. 1, July, 1909, from Dr. Winfield B. Mack, Veterinarian and Bacteriologist, College of Agriculture, Reno, Nevada, on Glanders. It contains chapters on the history, geographical distribution, cause, symptoms, post-mortem findings, diagnosis, mode of infection, prevention and eradication; and altogether is a valuable addition to the literature on this important subject.

APRIL 1, 1909, the Governor of Nevada appointed Dr. T. F. Richardson, D. V. S., B. S., of Goldfield, Nevada, a graduate of the Washington State Agricultural College at Pullman, Washington, State Veterinarian of Nevada to succeed I. W. O'Rourke, removed. Dr. Richardson has begun a vigorous campaign against infectious diseases that gives promise of much benefit to the live stock interests of the state.

## COLIC.\*

BY WM. DRINKWATER, MONTICELLO, IOWA.

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Mr. President and Fellow Members of this Association. With the idea of bringing this subject up for discussion, I offer this paper for consideration.

Colic is known as a painful spasmodic contraction of a portion of the intestine due to the irritation of indigestible food or some substance that is not considered food for horses or cattle.

The pain may be induced by the animal taking a large drink of cold water while in a heated or exhausted condition, or immediately after violent exercise, as the nerves of the stomach and bowels are in sympathy with the system, and those organs are not in a condition to take care of or assimilate a load suddenly forced upon them; or by changes of food, particularly a generous allowance of the same.

Water given immediately after feeding may wash out a part of the food into the bowels before the juices of the stomach have acted on it, and cause irritation, and sometimes impaction.

Exercise immediately after a large feed may disturb the functions of the stomach and bowels and cause flatulence and attempts at vomiting or rupture of the stomach.

Some kinds of grain, particularly corn, that is not well dried out before freezing weather comes on, or barley or oats of poor quality, will not digest and will cause flatulence, diarrhea or enteritis, all accompanied by distinctive symptoms.

Some horses become so subject to colic that they are almost useless to their owners, and are disposed of to others who will have little or no trouble with them owing to a different method of feeding.

Cattle occasionally manifest colic by kicking at their sides and lying down and getting up again quickly, owing to frosted or indigestible food.

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\* Read before Iowa State Veterinary Medical Association.

The different forms of colic are manifested to us by attempts at vomiting and the regurgitation of small quantities of food when the stomach is the seat of trouble, and sometimes some flatulence of the bowels is apparent, and the animal pawing with the fore feet, and lying down quickly and getting up again quickly. *Spasmodic contractions* of the truly digestive portion of the bowels are manifested by sudden pawing of the fore feet, or kicking toward the affected part with one or the other of the hind feet, and lying down suddenly, and rolling over and back repeatedly, and sometimes, by perspiration breaking out over the body.

When the caecum or colon is impacted, the horse looks from side to side and lies down and stretches out for a while, and may rise partly up and sit on the haunches, the latter being a symptom of inflammation of that part or of hernia of some part near. *Enteritis* is indicated by the horse lying down almost all the time and trying to balance itself on the back, and when it rises, to pawing with a forefoot violently, and trying to strike something in front of it, or get the fore feet into some higher plane, as if it were trying to climb. Sweats bedew the body till the inflamed portion of the bowel becomes mortified, and then the patient becomes quiet, and in a short time death is the result.

A jerking movement of the œsophagus, similar to a hiccough, indicates volvulus, intussusception, hernia or laceration of some part of a bowel.

I have made many post-mortem examinations of cases that did not yield to treatment, and have found rupture of the stomach; once where a simple twist of the duodenum would not allow the contents of the stomach to pass out while it was distended with flatulence, caused by a feed of green corn, which was intended for the hogs.

I have seen two or three cases where the omental coverings of the stomach were ruptured and had slid off that part, and the organ was attached only by the œsophagus and duodenum.

I have met with the omental covering of other parts lying loose among the bowels and sometimes a rupture of the mesen-

tery, allowing a number of feet of the bowels to lie among the other bowels, without any attachments; which I believe was caused by the violent rolling and falling of the patient before relief could be given.

I saw a case last summer where a rupture of the diaphragm allowed the stomach and a large portion of the intestines to slip into the thoracic cavity, and the horse lived about twenty-four hours with it.

I have found two different forms of bowel knot, and once, where a tumor like a hen's egg had formed on the side of the colon, and a part of the bowel had been drawn around it so tightly that passage of feces was impossible.

A case that had my attention for three days died, and upon examination we found an impaction commencing at the ileo caecal valve and extending back four or five feet like a beef sausage.

My theory is that where all the parts remain intact, that is, where none of the foregoing lesions have occurred, that relief ought to be afforded by medicinal or mechanical means, and I use Ol. Lini from a pint to a pint and a half, with one to two ounces of Ol. Terebinthæ for flatulence in stomach or bowels, and if more medicinal treatment is needed, I use Hyposulphite of Soda, three or four ounces, dissolved in hot water and an ounce of Chloral Hydrate dissolved with it or given immediately after.

If flatulence is apparent mostly in the stomach, probably relief would be best given with the stomach tube, but I have had little experience with it.

When the flatulence is most apparent in the bowels, I have used the trocar and canula with success.

For painful spasm of the bowels Chloral Hydrate has given me the most satisfaction, but as it is usually due to some irritant, to get rid of it seems to give the best permanent results by giving Ol. Lini and Turpentine or Eserine Pilocarpine and Strychnine have given the best results.

For impaction Ol. Lini and Terebinthæ, Aloes and Nux Vomica with Ammonium Carbonate and warm water injections and sometimes walking exercises if the patient is otherwise robust.

For Enteritis in horses or cattle, no treatment has ever helped or given any relief, and it is apparent that when the portion of bowel is inflamed that no medicine or any treatment can give relief and it is only when the affected part of the bowel is gangrenous that the patient seems to be relieved.

Occasionally we see symptoms of colic in cattle and a mixture of two oz. Nitrous Ether and one oz. of Aromatic Spirits Ammonia repeated two or three times hourly has given the desired effects without affecting the appetite or digestion.

This paper is based on my own experience, and colic has given me many days and nights of worry, work and study, and when I am told that a horse or cow is having trouble with its water, I prepare myself for an indefinite stay in any time of day or night.

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DR. R. T. WHITTLESEY, of Los Angeles, Cal., has been appointed veterinarian for the Los Angeles Aqueduct, which is a \$23,000,000 engineering proposition to bring a river of water three hundred miles from the Sierra Mountains to Los Angeles City.

There are 1,000 head of mules and horses strung along the line, and it is taking close watching to keep glanders from getting a foothold.

His health has been bad for several years, but he thinks roughing it on the deserts and mountains will make a three-year-old of him again.

IN renewing his subscription to March, 1910, Dr. W. A. Ax-ford, of Chester, N. J., says: "I have been a subscriber to the REVIEW since the time it began striving for a foothold among the elbowing thousands and have watched with pleasure its progress, until it stands to-day alone in its class as a veterinary publication. The REVIEW has always been of benefit to me, in my early manhood as well as in my declining years; for I am old now and begin to feel the infirmities of a busy life; but I want to die in harness, die in the shafts and straps, fall as the burden kills me one of the day's mishaps, one of the passing wonders, marking the busy road, a toiler dying in harness, heedless of call or goad."



## THE VETERINARIAN AS A SANITARIAN.\*

BY NELSON N. LEFLER, BATAVIA, N. Y.

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In response to an appeal from our worthy secretary to prepare something for this meeting, I decided on the above as my subject, at the same time feeling that I could hardly do my paper justice, so with your kind indulgence I will endeavor in my humble way to throw a little light, if possible, upon the subject of sanitation, and the relation it bears to the every day life of the veterinarian.

The sciences have declared that sanitation must play an important role in the welfare and preservation of the animal kingdom. For without proper attention along sanitary lines, we, as veterinarians are not doing our whole duty toward the proper protection of the public health.

In scanning the field of the veterinarian we note with pride the great strides which have been made in the last few years, and its broadening out into the field of scientific investigation and research work.

We also note with pride that the veterinarian has become quite a factor as an aid to the health department of our various cities and villages, and in quite a number of instances have been appointed to serve as a member of the board of health of his respective city, rendering invaluable assistance by his wise judgment and in keeping constantly before the public the great necessity of strict adherence to perfect sanitary conditions.

We have read, discussed and talked of antiseptics, disinfectants, antitoxins and last, but by no means least, the great bug-bear Tuberculosis, until we have worn them thread-bare. But little do we hear along the line of Veterinary Sanitation.

How many of us here are true sanitarians? How many of the members of this society realize the great importance of advo-

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\*Read before Gen. Valley Vet. Med. Ass'n, Rochester, Jan. 7, 1909.

cating as much as possible, in a professional way, the thorough observance of strict sanitary conditions, particularly as to stables and their immediate surroundings?

In order to be successful veterinarians we must also be thorough sanitarians, never tiring in our efforts to show our clients whereby they can improve on the sanitary conditions of their buildings and their surroundings. In so doing we are not only administering to the needs of our patients, but to the welfare of our clients also. How often are we called to administer to some sick animal which is being kept in a stable, that for unhealthy conditions, one would wonder that any living thing could survive the surroundings. A few of the more common unsanitary conditions we meet with as veterinarians are mostly in underground stables, where the floor has been laid upon the ground, allowing all the liquids to work upwards through the cracks, thereby producing a veritable hot-bed for disease-breeding bacteria. Another condition often met with, particularly in the country district, is allowing pools of seepage to accumulate in the yards and paddocks from which animals are allowed to drink at will.

The first essential to impress upon our clients is proper drainage of his buildings and yards, more particularly the dairy. Do not be afraid, as the attending veterinarian to a herd of dairy cows, to make such suggestions tending to better sanitation in the stable or milk room, as the case may be. The average farmer or dairyman is an educated man, quick to take good advice, if we will but convince him that it is to his interest, but with some of his shortcomings like traditions have existed for generations before him, and as his attention had never been called to the evil, it had been allowed to go on. It is our duty as veterinarians to advise with our clients and endeavor in every way possible to better his condition by educating him to the grave necessity of strict sanitation in all things.

If you will pardon me for deviating from my subject for a moment, I will just refer to another very important matter necessary for the success of the sanitary veterinarian, and that is ven-

tilation; which goes hand in hand with sanitation. There is no animal so susceptible to foul air as the horse, particularly while suffering from some of the different forms of pulmonary diseases. Some practitioners have wonderful success in the treatment of these diseases, while others have just as successful failures, and in a great majority of cases the success of the former was due to the fact that he insisted and got good, pure air, good careful nursing, together with careful attention to sanitary surroundings and very little medicine, while with the latter practitioner his failure is due mostly to his indifference to the laws of nature as to ventilation and sanitation, too much medicine, poor nursing and in cold weather insufficient clothing.

I thank you very much for your attention, and if by these few lines I have awakened a little interest or have added any suggestions which will prove of benefit, I will feel well satisfied with this little effort.

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HE DID NOT BELIEVE IN MICROBES.—The following clipping from the *New York Evening Journal* of July 19, 1909, relates a terrible object lesson to the skeptical victim who refused to be instructed by those who had made a study of a science of which he knew nothing:

“Until very recently a man up at Middletown, New York, had the notion that the germ theory is all nonsense. He hasn’t that notion any more, for it killed him.

“The man was Theodore Wright, fifty years old. He lived in a district where the germ of anthrax has been killing cattle. He said it was all nonsense to talk about a germ, and he skinned the cows that had died.

“He was warned to be careful, and especially to keep the fresh hides of the dead cows away from any part of his body that might be scratched and allow the germ to enter.

“To show his great contempt of ‘the germ theory,’ this unfortunate, ignorant man wrapped one of the fresh hides around his neck and carried it into the barn.

“Through some slight wound in the neck the bacilli or germs of anthrax, invisible to the eye of a man who did not believe in science, got into his blood. His face and throat began to swell shortly, and he was dead in five days, after suffering great agony.”

## HYOSCINE MORPHINE CACTIN THE MOST DESIRABLE ANESTHETIC FOR DOGS.

BY D. M. CAMPBELL, TOPEKA, KANSAS.

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In the following article "H.M.C." is used for brevity. It refers to a compound of Hyoscine, grain 1/100; Morphine, grain 1/4; and Cactin, grain 1/67. The manufacturers claim that this Hyoscine is made from hyoscyamus, and though chemically identical to pure scopolamine, differs in physiological action. I believe the compound as stated above is the safest anesthetic for dogs.

During the past year and a half I have performed about 70 oophorectomies in bitches under the influence of the H.C.M. anesthetic. There was no fatality among this number, neither during the operation nor subsequently and the anesthesia was in every case (sometimes a very small amount of chloroform was also used) sufficient where at least an hour was allowed to elapse between the giving of the H.M.C. and the beginning of the operation. A mistake I have made a number of times and have known others to make, is that of beginning the operation too soon after giving the anesthetic.

The greatest advantage I have noted from this anesthetic is the quiet it induces after operation. Shortly after a laparotomy under chloroform anesthesia bitches become very restless from the pain following the operation, and very frequently they are much nauseated, and the violent retching during the 36 hours succeeding is extremely undesirable, and in many cases it is the cause of internal hemorrhage. The almost absolute quiet that occurs during the 12 hours succeeding the H.M.C. anesthesia is most desirable and very difficult to secure by other means.

Perhaps one-half of the bitches presented to the veterinarian for spaying are at the beginning of the oestral period. It is the symptoms of approaching heat that determines the owner

to have the work done immediately. Before I knew of the H.M.C. anesthesia I would not operate under these conditions on account of the large amount of chloroform required at this time to produce narcosis, being dangerous to the patient and because of the pain and frequently hemorrhage that followed the operation. With the hypodermic anesthetic I cannot see that the operation is more serious for the patient than it is during the quiescent state of the reproductive organs. In four cases I removed the ovaries and the gravid uterus with no ill effects following.

As to the dosage, I have given H.M.C. in varying amounts. I once gave a full size tablet to a puppy weighing less than 10 pounds, and was called to see her 18 hours later, the owner stating the puppy had almost stopped breathing. Found her in a deep sleep breathing very slowly, but easily awakened. A hypodermic of strychnine and glonoin quickly revived her.

I have found a half size tablet to be all small dogs or fox terriers should have. I now give a full size tablet of H.M.C. for each 25 pounds of weight and usually find it necessary to administer a small amount of chloroform at the beginning of the operation. A much larger dose than this is borne quite well by all breeds to which I have administered it, except fox terriers. I have come near being unable to revive five animals of that breed after administering doses twice as large as the above. In a single case the above dose (one full size tablet to 25 pounds of weight) was insufficient; that was in a large bull dog to which was given  $1\frac{1}{2}$  full size tablets with no effect that I could observe other than the initial nauseating. This was not for an oophorectomy.

Within two minutes after injecting the H.M.C. the dog will completely empty its stomach, and usually the retching will continue till some mucus is thrown up. This passes, however, and after five or ten minutes no nausea remains. The anesthesia is not deep, a sharp word or quick movement will arouse the patients often when they are insensible to even the pain resulting from traction on the ovarian ligaments.

STRYCHNINE POISONING.—In strychnine poisoning in dogs I know of no other treatment that will equal a hypodermic of apomorphine hydrochloride (1/30 of a grain for a 30-pound dog), followed in ten minutes by a full dose of H.M.C. Dogs treated thus that were unable to stand and in such spasms that medicament could not have been administered by the mouth, were well in half an hour. But on no account should the apomorphine be omitted from this treatment. I have used this treatment in 8 cases of strychnine poisoning in dogs with recovery in each case.

ECLAMPSIA OF SUCKLING BITCHES.—I have used H.M.C. in two cases of eclampsia of suckling bitches. The first was one in which I had prescribed 6-grain doses of chloral in solution every ten minutes. This treatment was persisted in for two hours and the bitch which was a small one, was worse than at the beginning of the treatment. I was called again and administered a full size tablet of H.M.C. The bitch was sound asleep in 30 minutes and continued so for several hours. In the other case a small house dog suffering from a mild attack of eclampsia, was given a half-size tablet and was soon quiet.

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THE REVIEW comes every month like a letter from home.  
(*J. Harrison, V. S., Dalhart, Tex.*)

IS YOUR MILK WATERED?—A simple and practical test for watered or skimmed milk is credited by the *Scientific American* to Professor Michaud, of the Costa Rica State College. The suspected milk should be diluted with fifty volumes of water—one ounce of milk to two and a half pints of water, or any other convenient measure—well stirred, and then taken with a lighted candle into a darkened room. Now hold an ordinary table glass above the candle flame, and look down through its bottom at the flame while pouring the milk mixture slowly into the tumbler. When the fluid reaches a height at which the flame becomes invisible, measure its depth. If the milk was pure, this should not be greater than one inch. A good milk so diluted will obscure the flame when only seven-eighths of an inch deep.

# LITTLE THINGS THAT HELP TO MAKE SUCCESS IN THE PRACTICE OF VETERINARY MEDICINE AND SURGERY.\*

BY F. J. NIEMAN, MARSHALLTOWN, IOWA.

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I have chosen this subject, partially because of the little required in its preparation, more especially, however, for the lack of time, or a want of opportunity for the profound thought necessary in the preparation and the proper presentation of a deeper and more scientific subject. While I have little to say along this line, I have a desire to show my willingness to perform the duty required of me, as I believe it to be one that devolves upon us all, and should be performed alike by every member of this society, if its meetings are to be of benefit to us professionally. I have made no new invention nor important discoveries in the science of medicine or surgery, neither have I old hobbies to bore you with, or theories that I care to illustrate or discuss but simply want to call your attention to some of the many little things that we so frequently neglect, and so very easily forget in the practice of our profession, while grappling with the larger problems of daily life.

It is the duty of every practitioner to answer his calls promptly, and see that the surroundings of his patient are hygienic, plenty of good bedding, the ventilation good, in fact, all of the little details that go to make the patient comfortable.

A veterinarian may be well versed in all the isms of the category, but if he is not observant and careful in the many little things, he has failed in that important particular, and is not a successful practitioner neither can he long expect to retain the confidence of his patrons.

The doctor may correctly diagnose his case and rightly prescribe for it, but if he only *directs* the number of doses to be

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\* Read before the Iowa State Vet. Med. Assn.

given in a certain length of time, he has not done his whole duty to that particular patient. To illustrate, if feed and water are to be given see that the water is in a clean pail and comes from a clean tank or well, and that the pail is emptied and rinsed out regularly and fresh water supplied. The hay and grain should have the same consideration.

I have seen poor sick animals compelled to drink from slop pails, the hay had been in the manger for a week or more, all wet and soiled, the feed box contained oats that had actually begun to grow.

I regard as another very important little thing, that the doctor impress upon the mind of the caretaker that a great responsibility rests with him. He should be instructed to be careful and kind to the animal; at least once a day remove the blanket and give the patient a good gentle brushing, the limbs should also receive attention, such as brushing, fresh cotton and the bandages reapplied.

I have always found it to be a good plan to give an honest opinion of the case in hand, not always being too frank, telling the owner that the case was hopeless, but explaining fully the dangers of the situation. In examining your patient you should always observe cleanliness, all instruments and bottles should be clean and sightly, as nearly all people are more or less sensitive about those little things, and especially if you are called to see some family pet, and neglect of these little niceties will leave room for censure and might, in some cases, cause your dismissal.

In your surgery and obstetrical cases great care should be taken to see that your hands and instruments are thoroughly clean and free from disease, both for the good of yourself and patient. The skin of the finger tips should be thin and smooth, as the sense of touch is oft-times as necessary in making a diagnosis as that of either sight or hearing.

Nowhere in the science of medicine or the entire field of cure is there as great a demand for close attention to the little things, as are found in the field of infectious and contagious diseases.



It is the duty of every veterinarian to call diseases by their proper names, isolating the sick from the healthy, and reporting all contagious and suspicious diseases to the proper authorities, so they may be placed in quarantine, thereby following out the rule that will insure the greatest amount of good to the greatest number of people.

The veterinarians' office should be clean and neat, equipped with modern appliances and located on a business street. The doctor should be in accord with his surroundings, keeping pace with the onward march of the profession, thoroughly informed on all methods, showing a personal interest in his business.

He should keep his accounts posted up to date, having his patrons understand that any business done through his office is a matter of dollars and cents and all accounts are due when services are rendered.

There is no profession on earth as slack about collections as the veterinarians of to-day.

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THE ALABAMA VETERINARY MEDICAL ASSOCIATION held their second annual meeting at Auburn, July 23 and 24, when an interesting program was gone through with.

DR. S. H. ELLERY, Graduate of Chicago Veterinary College, 1894, died in the Springfield Hospital, Springfield, Mass., June 30, as result of operation for Intestinal Intussusception. He had been in practice since graduation at Palmer Brinfield, and afterwards was located at Greenwich Village, where he also conducted a hotel. He leaves a mother, wife and two small children, and was well-to-do. He was a grandson of Herring the safe manufacturer.

ROOSTER DRAWS A CART.—Judd, a ten-pound Plymouth Rock rooster, owned by Abel R. Woodward, a merchant of Winsted, Conn., has been broken to harness by Woodward's young son, Irving, who hitches the chanticleer to a cart and drives him around as one would a horse.

Judd cannot trot in harness yet, but is a fast walker. The harness consists principally of a breast collar, traces and reins. —*New York World*, Sunday, July 25, 1909.

## REPORTS OF CASES.

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*"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."*

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### FATAL COLIC, A RESULT OF OBSTRUCTION WITH A LEIOMYOMA.

By A. T. KINSLEY, M. Sc., D. V. S., Pathologist Kansas City Veterinary College.

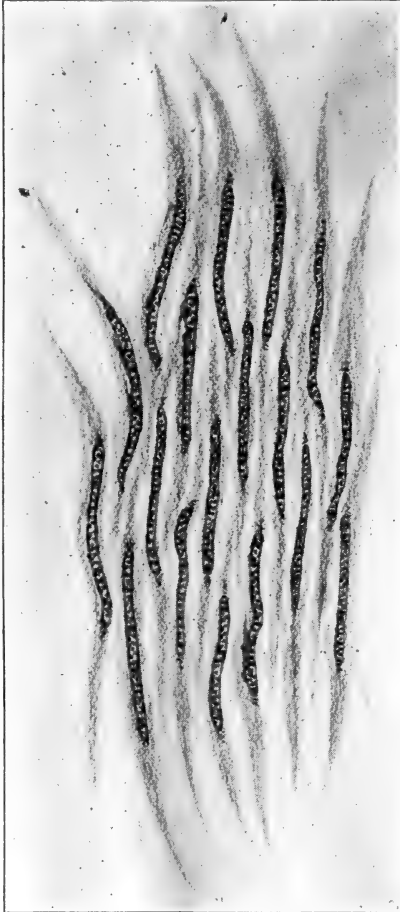
A seven-year-old male mule was taken to a veterinary hospital for treatment. The mule was the property of a farmer and



From a photograph of a section of intestine showing the leiomyoma. The intestine was turned inside out in the above.

had been used almost entirely on the farm, occasionally being driven to town. Early in the morning of the day that the mule was presented for treatment he and his mate were hitched to a

wagon loaded with hogs and driven  $3\frac{1}{2}$  miles to town. After the hogs had been unloaded this mule showed some signs of colic and by a careful examination it was determined that the mule was afflicted with impaction colic. He was placed in a comfortable stall and given linseed oil and an anodyne.



Cameralucida drawing of a microscopic section of the intestinal leiomyoma showing the typical fusiform cells with a rod-shaped nucleus.

The symptoms gradually became more pronounced and the mule could not be quieted even by large doses of chloral and cannabis indica, and finally died about 18 hours after he was taken in charge by the veterinarian.

**AUTOPSY.**—The large colon, especially the second portion of it, contained an excessive quantity of densely packed partially digested food material. About 20 inches anterior to the ileocecal valve two tumor like masses were found. The two tumors were about 3 inches apart and each of them was about the size of a large egg. (See the accompanying illustration.) These tumors were both suspended from the superior or mesenteric portion of the intestine and projecting downward practically occluded the intestinal lumen. They were completely surrounded by a fibrous capsule; were rather dense and cut with a resistance similar to fibrous tissue; in color they appeared very much like involuntary muscle; they had a limited blood supply.

Histologically these tumors were found to be composed of involuntary smooth muscle tissue, with a small amount of supporting fibrous tissue interwoven and were called leiomyomata. Their being circumscribed, and the fact that they were completely encapsulated, was sufficient to differentiate them from hypertrophy of the intestinal muscle.

Several days after the mule died it was learned that he had been subject to colic, having an attack once each month, or even more frequent.

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## GASTRO-ENTERITIS IN HOGS.

CAUSED BY EATING YOUNG COCKLEBURS (*Xanthium Canadense*).

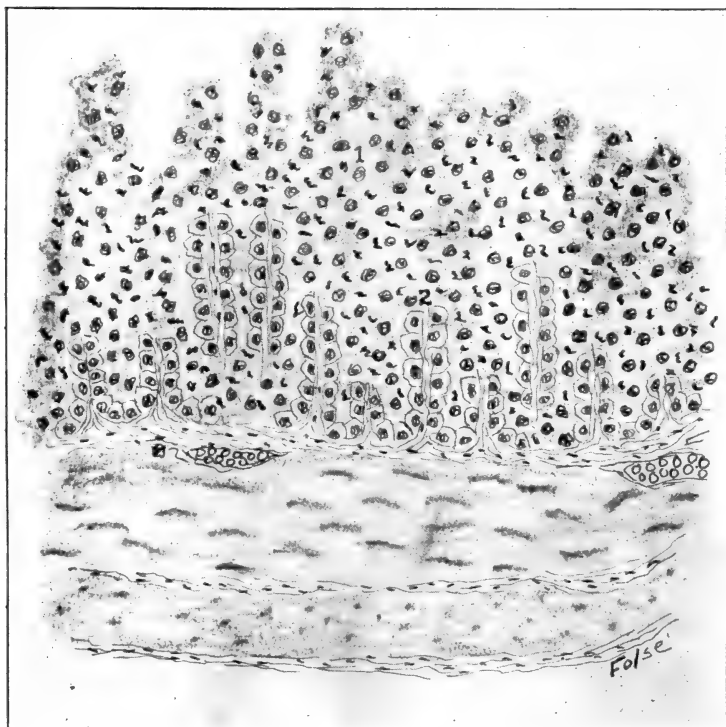
By A. T. KINSLEY, M. Sc., D. V. S., Kansas City, Mo.

On May 20 the superintendent of a large farm in Clay County, Missouri, found seven 6 months' old shoats dead in the pasture. On arriving at the farm the superintendent said he had turned 100 six months' old shoats in a forty acre field two or three days previously. This field had been in alfalfa until June, 1908, when the alfalfa was destroyed by the overflow of the Missouri River. On driving across the field it was found to be covered by cockleburrs just coming through the ground. The hogs were noticed to eat the young cockleburrs, especially those that had just pushed up through the soil.

The remaining live hogs were driven to the barn and placed in a small pen, where they were inspected to determine, if pos-

sible, whether any others were affected. One was found that appeared dumpish and showed little tendency to move about. It had a normal temperature, and in fact seemed normal in every particular except that it was dull and stupid.

The dead hogs were carted to a pile of stumps, where they could be readily cremated, and a careful post-mortem examination was made of three of them with the following findings: a marked gastro-enteritis involving the entire stomach and small intestine (see cut), and in one the inflammation extended for



Section of gastric mucus membrane of pig, poisoned by the young cocklebur plant X 100.

considerable distance into the large intestine. The liver was hyperæmic in two cases and practically normal in the other. No other lesions were noted.

The inflammation was intense, the entire mucus membrane being involved and in one case it readily sloughed, leaving a de-

nuded surface (this was not the result of post-mortem changes, for the hog had not been dead for more than 1½ hours). The inflammation had the appearance of being caused by some chemical irritant. From the history and post-mortem lesions, the cause of death was given as acute gastro-enteritis caused by eating young cockleburs.

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### INTERESTING CASES.\*

By W. B. WASHBURN, Tiffin, O.

The subject assigned me by our worthy secretary, in my opinion, is one of the most important that we, the common country practitioners, have to deal with.

We, who have to be able to treat all the domestic and sometimes some wild animals, from the bird to the horse and cow, do surely need the various experiences of our fellow practitioners.

Interesting, and I may say puzzling cases, are occurring every day in the practice of veterinary science which, if reported at these meetings, might possibly be of some benefit to a few of us at least, while to the teachers, to the men engaged in control work, to the bacteriologists or microscopists, the cases that are of interest, or that occasionally occur in the work of the country practitioner, are to them of little value. However, many of us are country practitioners and in a little hamlet like the place where I practice, the subject of "Interesting Cases," as assigned me, might better be styled "The Report of a Few Cases" that were of interest to myself. However, I will not bore you with many of them.

Case No. I. is a continual one of over two years' standing, that of a roan draft mare that came to us two years ago last spring as a four-year-old with an enlargement on the right side of the face over the third and fourth upper molars, about the size of a small hen egg. After having treated it for about two months with the various mercurial ointments and linaments to no avail, she was returned for examination, and we found the thing to be as large as a goose egg. The teeth were examined very carefully as were they the first time we saw her, but they appeared perfectly sound.

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\* Presented to the Ohio State Vet. Med. Assn., Jan. 12-13, 1909.

We trephined the enlargement in two places, but got only a yellow serous fluid from what appeared to be a perfectly smooth cavity, and she was again sent home.

The wound healed slowly and soon after the whole right side of the face began to enlarge, and she was again returned for examination and treatment.

This time we decided to remove the whole enlargement, which consisted of the entire outside of the superior maxillary bone and up to and into the superior maxillary sinus.

We called a couple of physicians to examine the job after we had finished, and they thought the trouble was now ended.

However, such was not the case, for a few months later when we thought everything was O. K., the head began to discharge as usual a serous fluid mixed a little with pus.

Having come to the conclusion that she had better be in the fertilizer works than in that condition in that section of country, I bought the mare and shortly afterward she began to show some difficulty in breathing. No discharge, however, coming from the nostril.

After veterinary counsel, diseased condition of the turbinated bones was the verdict, and removal of the same recommended.

The operation consisted of two trephine holes into the frontal sinus at the base of the right nasal bone and a third hole in the lower part of the nasal bone. The bone between, consisting of about all of the nasal bone, was then sawed out, the frontal sinus cleaned out and the superior turbinated bone removed.

While at work near the bottom of the wound, my curet came in contact with a bone substance which revolved very readily, and upon examination appeared to be about four inches in diameter. The way we thought best to remove this was to crush it, which we did with a pair of dental forceps, and upon further examination found it to be what I called a bone cyst, the walls of which were fully  $\frac{1}{2}$  inch in thickness, and perfectly smooth on both inner and outer surfaces. This cyst contained the same serous-like fluid that had previously come from the head.

The question with me was, what was the cause of this formation? I would like to ask whether any other member ever had a similar case?

But to continue with the mare. This summer she became the worst cribber I ever saw, and after trying about every method and device we could think of, such as sawing between teeth, wedging, hog rings, etc., we cut the tendon of the sternomaxil-

laris muscle and she quit cribbing, and so continued when I traded her off about a month ago.

Case No. II. That of a gray draft stallion used out of season in a coal wagon.

On March 9 last, by some violent exertion in getting a heavy load out of a mudhole, he ruptured a vessel, I presumed, in the head, and bled very profusely from the nose; so much so, that when we got on the ground, he could scarcely stand.

The hemorrhage was stopped by intravenous injection of adrenelin and nasal douches of ergot and iron; stimulants were given, and in about ten hours he was moved two blocks to his stable.

The second day we were called and found right lung filled with blood, all it would stand, and a considerable amount in the left; temperature  $104\frac{1}{2}$ ; and it was all he could do to breathe; pulse according.

This being a good case, we thought, on which to try the nitrox salt preparation, we immediately gave him 2 oz. in the jugular, repeated the same in ten hours, and once a day thereafter for six days. He recovered nicely from the lung trouble in due time, but on or about the fourth or fifth day his penis came down and we were never able to get him to retract it within the sheath.

The various ointments and lotions including bandages were used, but without effect. The electric battery and generator, together with nux vomica to the verge of convulsion, were used, but no results.

We then recommended amputation, but the owner would not consent, and suggested castration instead, which we did on May 11, but this did not better the case.

Having become tired of seeing the horse about in that condition, early in June the owner at last said, "Cut the darned thing off."

Our mode of operating in the case, after we had cast and chloroformed the horse and disinfected the parts, was to pass the catheter and place two ligatures about the penis about two inches apart. From the front ligature we cut in a V shape to the back one, the apex at the rear. The tissue down to the urethra and part way up the side of it having been dissected away, the urethra was split and stitched back to the sides.

The penis was then cut off at the front ligature and parts thoroughly cauterized, done up in tincture of iron and the horse released. In three days the wounds were dressed and every few days thereafter. The horse is now at work every day and sound.



About eighteen inches of the penis was amputated.

What caused the paraphymosis of the penis?

Has anyone a word to say in behalf of nitrox salt?

We imagined great benefit in this case.

Case No. III. A black grade draft mare was brought to our place in early spring in a very much emaciated condition, so much so that her weight was but 1,000 pounds. Owner's statement was that she had been suffering from "The Whites" for about six months. She had been treated by two different practitioners for leucorrhœa and one for continual menstruation, with a last recommendation to breed her. We tried to persuade owner we could tell him nothing about the case without a physical examination of the genito urinary parts, but he insisted that there was nothing wrong but leucorrhœa, and wanted treatment for the same.

As occasionally happens at our place, we had a busy day and gave him treatment for bladder irritation after his description of her frequent to almost continued micturition.

However, the mare came back in about two weeks and examination revealed what I now have with me, found in the bladder. (*Exhibits calculus.*)

After trying with all the instruments I had and could borrow to crush it, but to no avail, we decided to cut for it, which we did by cutting down through the floor of the vagina, making a hole in the fundus of the bladder large enough for the easy removal of the deposit.

The bladder was thoroughly irrigated, then stitched up, which consisted of stitching the vagina and bladder with the same stitch.

A solution of hydrastis and opium was left in the bladder and a drainage tube put in to take away the urine as it accumulated. This tube consisted of a half inch rubber hose, and was held in position by various bandages for five days. Mare appeared to do well and was sold to the shipper in the fall weighing 1,450 pounds.

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### SCRAPS.\*

By H. B. TREMAN, Rockwell City, Iowa.

Having noticed at our previous meetings the interest every one seemed to take in all new means of restraint or a change in

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\* Read before the Iowa State Vet. Med. Assn.

the usual technique of an operation, etc., etc., I thought the following would not come amiss. I used always to dread holding or handling the hind feet of a young or unbroken horse, so I devised the following plan:

SCRAP No. 1.—Take a piece of  $\frac{5}{8}$  rope with a noose that will not slip in one end large enough to go round the neck near the shoulder, then a half-hitch around the body just back of where the back band of a harness comes, then back through a strap buckled firmly around the roots of the tail, then a ring or a knot is fixed and a small block and tackle runs from it to a hobble on the foot you desire to raise, a ten-year-old boy can do the rest.

SCRAP No. 2.—The first few times I passed the Knisely stomach tube with a speculum in the horse's mouth I was considerably disgusted, especially so as one horse developed deglutition pneumonia as a result of hard inhalations through the mouth. So I conceived this plan and have used it ever since.

I made a simple head stall like a common halter, except there is no throat latch, and the noose band is quite heavy and arranged so it can be drawn very tight around the nose by means of a common hame strap, this is placed just high enough so as not to interfere with the animal's breathing.

I then lubricate the tube and pass it in through the interdental space and down the oesophagus as usual. The animal breathes much easier and consequently does not resist the operation so strenuously. Besides, the little halter is much more convenient to carry than the heavy speculum. I also think the tube is less liable to enter the trachea than it is with the mouth held open.

SCRAP No. 3.—There is a simple little operation that has caused me some grief and I know of others who have not been very successful with the same. That is sewing up a split ear. They often either fail to unite, or, if the points are slender they may curl over, making the condition much more unsightly than it was to start with, which is quite embarrassing to say the least.

My method may not be new to most of you, but may interest or help some, and as one is seldom called upon to treat one except on a valuable horse, it is essential to at least not make things worse.

I scarify the edges well, then, instead of sewing through the skin and cartilage, as I was taught to do, I put in a row of interrupted sutures, through the skin only, first on one side of the ear, then repeat the operation on the other side. This causes less irritation, better apposition and does not wound the cartilage,

consequently less danger of the slender ear points curling over, and I believe the parts are more likely to grow firmly together.

SCRAP No. 4.—As horses are only supposed to have one set of permanent molars I thought this case somewhat unusual and a report of it interesting.

Two years ago a two-year-old colt was brought to me with the first permanent molar on either side badly decayed. It was necessary to trephine on both sides and repulse the teeth, which I did, and got a nice recovery.

The colt changed hands and a few weeks ago was brought to me to have its teeth examined. You can imagine my surprise to find two quite natural healthy appearing teeth just well through the gums in the places of those I had punched out.

SCRAP No. 5.—On September 29, 1908, I was called to the neighboring town of Jolly to see a bay mare 8 years old, weighing about 1,150 pounds, belonging to a Jewish junk dealer. The mare had been sick since the Saturday before, this being Tuesday. Found the patient lying down, apparently resting; there had been no rolling at any time; temperature 102, respirations nearly normal, pulse about 70 and not very strong.

History was that mare had been in this same condition since the beginning. She would stand up, sometimes for an hour or so at a time, eating hay; she also ate some grain at feeding time. When pain came on would draw up, tramp around a little and lie down and remain quiet for perhaps an hour.

The bowels had been moving nearly normal all the time and the stools were about normal, except a trifle hard. The owner had not seen her urinate, and, of course, was sure it was her water. My diagnosis was some sort of an impaction of the bowels, although it was a little hard to account for so nearly normal bowel movement.

I gave the Reeks treatment and left Amon. Carb. and Nux Vomica, to be given every two hours, with instructions that if there was no improvement next morning to call me up. I heard nothing more till Friday, when they called for me to come.

I found the mare in the same condition, except a trifle more exhausted. This time I made a rectal examination and found an impacted bowel. The exact shape was hard to determine; it was so large I could not reach the end of it. This, together with the fact that the bowels were and had been moving regularly for nearly a week convinced me that it was the caecum that carried the load.

I gave a very high rectal injection, inserted 8 feet of my stomach tube and used eleven buckets of water. Gave  $1\frac{1}{2}$  grains of Eserine Sulph. hypodermatically with Amm. Carb. and Nux Vom. In one hour gave .01 Lini, Spts. Amm. Arom. and Turpentine and left Amm. Carb. and Nux to be given every two hours. When I called for a receptacle of some kind to put the Amm. into to leave with him the owner said he still had all the medicine I left the first trip. I very promptly gave him a very emphatic piece of my mind for not giving my medicine and then blaming me for not curing his horse.

The symptoms continued the same all day except for an hour or so after giving the Eserine she was in more pain. But the next morning the old man said there was a whole wheel-barrow load of manure behind the mare; complete recovery followed.

I am fully convinced this was a case of impaction of the caecum. If any of you remember the report of two cases of this kind that I made last year you may recall that the symptoms were very similar to the one up to the point where the caecum ruptured in the two fatal cases.

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## EIGHT CASES OF PUSTULAR ECZEMA.

By L. H. KRAUS, D. V. S., New York, N. Y.

Eight horses in one stable were more or less affected, two of them very badly and almost bald—all more or less bruised from biting themselves.

Applied once daily for three days very liberally a 1 to 500 Chinosol solution. After first application there was a perceptible decrease of the itching. After the second application, there was very little biting and after the third application, almost entirely free from itching. After a week's use of Chinosol solution, each horse was comfortable and the biting in the meantime ceased entirely. At my last visit, the skin was restored to its normal condition. The hair is growing nicely. The worst of the cases, to which I paid particular attention, after two weeks showed no more signs—the hair having been fully restored. The bitten places healed beautifully.

It is interesting to note that no flies or other insects will molest that part of the horse or dog where Chinosol solution is applied, and the solution can do no harm to the animal because it is not a poisonous substance.

## ABSTRACTS FROM EXCHANGES.

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### ENGLISH REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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THROMBOSIS OF THE POSTERIOR AORTA AND INTERNAL ILIAC ARTERIES [*J. Craig, N. A. M. R. C. V. S.*].—The subject was a stout bay mare in good condition and about 19 years old. She had never been worked hard and had never had a day of sickness. Since two and a half months she has exhibited symptoms which left no possible doubt as to the diagnosis and she was destroyed. At the post mortem, made immediately, the subserous fat was found in some places to be 2 and 3 inches thick. On examining the condition of the posterior aorta a thrombus was found in the last three inches of the vessel, extending backwards for a distance of six inches into both internal iliac arteries and their subdivisions. Attached to the superior aspect of the vessel, this thrombus was widest at the origin of the two external iliacs and a small projection passed into the lumen of both vessels. The thrombus was smooth on its free surface, slightly cross-striated, firm and of a yellowish brown color. Partial in the aorta, in the internal iliac, the iliaco-femoral, the obturator, lateral sacral and the gluteal, it occupied nearly the whole of the lumen of the vessels. The heart was hypertrophied, weighing over 10 pounds. Two or three small white areas were met within the walls of the left ventricle. The inside was normal. On the aortic semi-lunar valve there were two little hard calcareous nodules, and also on the left coronary. In the posterior aorta were also some small nodules in the course of the vessel. No lesions in the anterior mesentery. No sclerotomata nor worm in the intestines. A phlebolith about 4 inches long existed in the direct colic vein over the first portion of the double colon. It was irregularly cylindrical, very firm, even calcareous and partly colored in yellow and black. It was easily movable in the vessel.—(*Veter. News.*)

INGUINAL HERNIA OF GRAVID UTERUS IN A BITCH [*Prof. Geo. H. Woodddridge, F. R. C. V. S.*].—Toy Yorkshire terrier bitch is pregnant 97 days. She has in the left groin a swelling

which had gradually grown larger. It is quite big and painful. It is a herniated gravid uterus containing a single fœtus. Hysterectomy through the hernial sac is to be performed. Anesthesia is obtained with injection of morphia and completed with a few whiffs of chloroform. The operation was rapidly proceeded with, the uterus brought in the hernial sac, ligatures applied and the body being cut through with a scalpel. Both ovaries were removed. The puppy was dead. Sutures were inserted in the hernial ring and the sac cut off. Finally the skin was sutured, the wound well dried with ether and sealed with flexible colodion. After four days a collection of pus had formed which was emptied and dressed with carbolic solution. Chinosol dressings afterwards brought the case to successful issue. The author has already recorded a similar case in which he had obtained also a very rapid recovery.—(*Veter. Journ.*)

AN INTERESTING CASE OF HARE-LIP AND CLEFT PALATE NOT DUE TO IN-BREEDING [*Prof. F. Holday, F. R. C. V. S.*].—These conditions are very often met with in the same patient or may be met with separately. In and in-breeding is generally responsible for the deformity. The author does not believe it to be the cause. In this case "the dam was a toy Yorkshire terrier and the sire a very small Aberdeen; the result of the mating being three tiny puppies, two of which had a well-marked hare-lip and cleft palate, so much so that they could not suck at all and had to be destroyed."—(*Ibidem.*)

USE OF IODINE ON THE SKIN AS AN ANTISEPTIC IN SURGICAL WORK [*Guy Sutton, M. R. C. V. S.*].—In horses and in dogs the author has resorted to it. In twenty cases of paracentesis of the thorax, after coating the walls of the chest with tincture of iodine and with the canula and trocar boiled, clipping of the hairs and washing the parts with soap immediately prior to the puncture, in no case has suppuration taken place. Similar results with similar attention in cases of puncture of the cœcum. In over twenty neurectomies, median, ulnar and plantar, healing by primary union has always followed. In two castrations where the scrotum had been coated over with tincture of iodine previous to the incision, the animals were able to work after two days and suppuration was reduced to the minimum. Large and small dogs were castrated, small superficial tumors were removed, iodine always doing its part good. It does it even in the castration of cats. In suturing eyelids, nostrils, or any small wounds in horses, iodine has not irritated and with it suppuration has

been infrequent. The author is a strong advocate of iodine to obtain asepsis as it is easy to apply, is inexpensive and highly efficient.—(*Ibidem.*)

SARCOMA OF THE TARSUS OF A DOG WITH SECONDARY INFECTION [*J. A. Gilruth, M. R. C. V. S., F. R. S. E., and C. J. Reakes, M. R. C. V. S.*].—St. Bernard dog had a swelling on the right tarsal joint, apparently implicating the tibia above. No history of previous injury, but this is suspected on account of the excessive lameness of the dog. He died. Post mortem showed extensive emphysematous condition of the lungs, heart enlarged, liver congested and the seat of nodules, homogeneous and circumscribed; one is as big as a marble and another the size of a split pea. The kidneys are congested and the seat of punctiform hemorrhagic spots. The bladder was full. Involving the whole right tarsus there was a mass of apparently new growth, fairly dense in consistency, with calcareous points here and there. The lower end of the tibia was involved in the diseased process. Sections of the growth placed under the microscope proved it to be round-celled sarcoma.—(*Ib. and Annual Report.*)

NATURALLY DIGESTED FOOD FOR YOUNG PUPPIES [*V. de V. H. Woodley, L. C. V. D.*].—A quite interesting observation. After whelping her pups for about six weeks, and as they worried her constantly, the mother was taken away from them one night. After being fed she was returned to them in the morning, and after being with them some fifteen minutes she vomited her morning's feed in a semi-digested state. The pups ate it. She at times did the same thing in the evening. At first, thinking the vomiting was because she had swallowed something that did not agree with her, attempts were made to prevent this peculiar meal. She seemed so glad in attracting the pups round her and having such voluntary bringing up of the ingesta that the thing was allowed to go on, and the pups appeared to get accustomed to it, to expect it, and played about her mouth until she fed them. Taken away for a week from home, the bitch stopped vomiting; but when she returned she continued the thing awhile. The author has been informed of another similar occurrence by a large dog breeder.—(*Veter. Record.*)

UNTOWARD RESULT OF A HYPODERMIC INJECTION OF STRYCHNINE [*Duncan MacLeod, M. R. C. V. S.*].—An addition to similar cases already recorded. Bay saddle gelding was being treated for impaction. Good dose of chloral followed by seven drachms ball of aloetic mass. The next morning the pulse is

weak and irregular. There is complete absence of borborygms and paralysis of the bowels, which are stimulated by strychnine. A solution containing one grain is given subcutaneously. Five minutes later the animal is very restless; he has profuse salivation, and while a sedative drench is being prepared the horse breaks loose from the men that hold him, gets out into a yard, runs round several times, has violent muscular spasms and dies in a short period. Diaphragmatic hernia was found at the post mortem. Was the strychnine the essential cause of death is asked by the writer?—(*Ibidem.*)

BLACKLEGINE [*W. T. Huwvetson, M. R. C. V. S.*].—An answer to the pro and con opinions relating to its use. A client, says the author, wired me to attend his stock and requested me to bring setons. Surmising that there was trouble with blackleg quarter, I took some blacklegine with me. Four stirks had already died with the disease. I explained to my client that blacklegine was better than setons, telling him of my large experience in using it. The owner replied that he had read in newspaper clippings where some veterinary editors had published and where setons were advocated in preference to anything against black quarter. However, as I was favoring blacklegine, he allowed me to vaccinate thirty-seven gray cattle under the skin about half way up the tail. Four days later, summoned again, one of the vaccinated was found, having developed black quarter. Among the symptoms he showed considerable crepitation over an area behind the posterior edge of the scapula and extending down inside the elbow joint. Contrary to the desire of the owner, who wanted the animal killed, he was put under tonic treatment. The stirk did not die, but all the skin covering the area of crepitation had or was sloughing away, leaving a large wound, which was treated with Chinosol. The beast made a splendid recovery and the owner became satisfied that had it not been for the vaccination he would have died. Now for my client blacklegine is far superior to setons.—(*Veter. Record.*)

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## FRENCH REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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BUCCO-SINUSAL FISTULA IN A HORSE [*Prof. P. Leblanc*].—An animal, recently bought, had on the left side of the face,



upon the region of the inferior maxillary sinus, a fistulous opening, from which a foetid discharge escapes, mixed with food. A probe introduced penetrates into the sinus and, after some difficulty, enters the mouth through an opening situated between the external face of the dental arch on a level with the second and third molars and the internal face of the cheek. The animal was cast and trephined. That operation had evidently been performed before, as there are cicatrix showing it. The sinus was opened freely, its contents carefully removed and the walls of the fistulous tract well curetted. The wound and sinus were filled with gauze and wadding, and it was hoped that by this way the opening of the buccal cavity would close. The animal did well as far as the wound of the trephining went, but the communication between the mouth and the sinus did not seem to close. It is then that the author packed the bottom of the sinus with gutta percha, softened by dipping in warm water, and spread it over the bottom of the gingival groove so as to make it adhere to the borders of the opening. This did very well as the opening of the mouth gradually closed, and after one month the plug of gutta percha was still in the sinus, where it remained in place.—(*Journ. de Zootech.*)

FATAL VARICOSE ULCERATION IN A DOG [*Prof. G. Petit and R. Germain*].—Little is known of this disease of veins in animals. They are rather rare and *a fortiori* are varicose ulcerations. The history of this dog is short. Aged eight years, he had on the external face and near the superior part of the metatarsal a small tumor which is ulcerated. From this ulceration abundant hemorrhages have occurred frequently, and he died without treatment. At the post-mortem examination all the organs were found healthy and the histological study of the tumor revealed its true nature, an ulcerated varicose tumor.—(*Bullet. de la Soc. Cent.*)

OSSIFYING PACHYMEINGITIS OF THE TENTORIUM CEREBELLI IN A YOUNG DOG [*Mr. Lecarpentier, student*].—The dog was nine months old and presented the following symptoms: Carrying the head to one side at a point on a level with the axoido-atloid joint. The great and small oblique muscles of the head are atrophied, the posterior straight of the right side are hard and much contracted. The muscles of the left side are soft. The head is inclined, with the right ear lower than the left. The dog hesitates to walk; made to do it, he staggers and then moves in a circle, 'to the right or to the left. Sometimes he executes a sideway motion and then drops suddenly on his right side. The

cerebral functions do not seem diminished. Temperature and respiration are normal. The appetite is fair. After a few days paralysis sets in. Taken out of his kennel, he turns on himself round his longitudinal axis to the right. Soon trismus takes place. Death occurred after 12 days of sickness. The lesions were entirely localized on the meninges of the cerebellum. The cerebro-cerebellous crests are continued by a bony production due to the ossification of the tentorium cerebelli and form a complete bony ring through which the encephalic isthmus passes. This bony septum is moulded on the anterior face of the cerebellum and is thick and round on its inferior border. The choroid plexuses were congested and the right inferior maxillary nerve was also pressed upon by the cerebro-cerebellous crests of the same side.—(*Journ. de Zootech.*)

COMMUNUTED FRACTURE OF THE GREAT SESAMOID AND OF THE POSTERO-SUPERIOR EXTREMITY OF THE FIRST PASTERON WITH LUXATION BACKWARDS OF THE RIGHT FETLOCK [*Mr. Pecus, army veterin.*].—Ten-year-old mare, galloping, suddenly stops. She has dislocation of the right fore fetlock backwards. The principal metacarpal bone has pressed heavily on the sesamoid articular surfaces of the first phalanx, broke it and crushed the two large sesamoids in a great many pieces. The tendons of the perforatus and perforans are also extensively lacerated. The animal had been neurotomized some two and a half months before the accident.—(*Bullet. de la Soc. Cent.*)

HEMORRHAGIC LESIONS OF THE LIVER IN A DOG, SIMULATING ANGIOMAS [*Mr. Agliany, army veterin.*].—A St. Germain pointer, aged five, although having good appetite, is losing flesh and has a dull appearance and is weak. He carries marks of blisters on both sides of his chest and both hypochondriac regions are protruding outwards. His visible mucous membranes are pale, his pulse and respiration a little more frequent than normal. Percussion on both sides of the chest reveals dullness over the entire height of the thorax, in the posterior region and forward as far as the seventh or eighth rib. By auscultation the respiratory murmur is heard only in the anterior part of the thorax and not in the posterior, but in that part clear, loud borborygms are detected. Tuberculin test is negative. Submitted to a diet of milk, the dog seems to rally somewhat, but as soon as this mode of feeding is stopped relapse is manifest. Soon the symptoms become more marked and serious. The abdomen has become hard, somewhat painful; the hypochondriac regions are

more and more prominent, principally that of the right side, which is now deformed and has the aspect of a large hard mass. It is the liver hypertrophied. The animal always lays on the left side. After the series of the classical manifestations of hepatitis the dog dies. At the autopsy the liver is found enormous, pushing forward the diaphragm and reducing the size of the thoracic cavity. It weighed three kilogs four hundred and thirty grammes. It is bosselated by tumors uniformly situated on its surface and in its thickness. These are either of light red or of dark color, soft almost to fluctuation and varying in size from that of a hazel nut to that of the fist. In the left lobe there is one which is very large, and in the middle lobe there are two, quite large, and one of which has burst. The hepatic glands are infiltrated and congested. The gall bladder was full. The spleen had also 7 or 8 small tumors similar to those of the liver. The left lung was the seat of congestion by hypostasis. Heart normal. At first the tumors were considered as angiomas but the histological examination showed them to be simple hemorrhagic spots in the liver.—(*Rev. Gene. de Med. Vet.*)

STUDY ON HEART DISEASES OF THE HORSE: THREE SUDDEN DEATHS [*Mr. Morisot, army veterin.*].—Diseases of the heart are of physical and sometimes of moral order. The first of the three observations shows that in horses, as in man, normal causes have sometimes strong repercussion on the heart.

1. OBSERV.—Mare ridden at a horse show. After going a certain distance she stops suddenly and refuses altogether to jump an obstacle. The rider insists and fights with her for about three minutes and finally gives it up and takes her to her box. When there the rider loses his temper and punishes the mare severely. Suddenly frightened, the mare is taken with violent trembling of the whole body, arrest of the heart brings on syncope with passive congestion of the lungs; the mare drops down and dies in three minutes. POST MORTEM: Great passive congestion of both lungs. Pericardium is the seat of old lesions with marked myocarditis.

2. OBSERV.—Sudden death of a 7-year-old horse after a gallop. POST MORTEM: Heart much hypertrophied with increased size of its cavities. It weighed 6 kilogs. 30 grammes. Lesions of endocarditis. Tricuspid and mitral have fibrous vegetations and do not close completely the auriculo-ventricular openings.

3. OBSERV.—Seventeen-year-old horse found dead in his stall. Endocardium diseased. Mitral and sigmoid valves swollen and

covered with granulations. These were more marked in the right ventricle.—(*Ibid. and R. G. de Med. Vete.*)

INTOXICATION BY COLCHICUM [*Mr. A. Pirlot*].—A cow is taken sick while at pasture. She lays in sterno-abdominal decubitus with her head bent towards the shoulder. The pulse is quick, respiration rather accelerated, temperature normal. Rumination has stopped. There is slight tympanitis. The hind quarters do not react when pricked with pins. The animal is unwilling to rise. Rectal exploration reveals a distended rumen and the presence of a foetus, the cow was pregnant and in her fourth month. On inquiry it is found that the animal has taken her last meal in a field where colchicum grows freely. To this the ailment is attributed.

TREATMENT.—10 centigrammes of aqueous solution of nitrate of pilocarpine are given subcutaneously. Result, abundant salivation and ejection of blackish diarrhœic fœces. Strongly alcoholized coffee is prescribed next and mucilaginous enemas. Improvement was manifested the next day, and in ten more the animal was in her usual health. Five months later she gave birth to a very small calf and her placenta had to be taken away from her. In two previous years she had calves of very good size and the placentas came off rapidly. Can the condition of the last calving be attributed to the intoxication by the colchicum?—(*Revue veterin.*)

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## HUNGARIAN EXTRACTS.

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By Prof. A. LIAUTARD, M.D., V.M.

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PRESSURE UPON THE RECTUM BY THE HORNS OF THE UTERUS [*Doct. Marek*].—A mare had slight colic and complete arrest of defecation. Rectal examination revealed that the terminal end of the rectum was empty and at the entrance of the pelvis, the hand feels a strong resistance and finds the cavity of the rectum so reduced that only one finger can be pushed into it. Beyond this the intestine is felt much distended with fœces. The

portion of the rectum thus closed corresponds to the part where it is situated between the uterine horns and it is them that squeezes the rectum between the uterus and the pelvic curvature of the large colon which is dilated with gas. Digital exploration shows that the strangulated part is covered with clots of blood. A few fœces were expelled after irrigations, and in repeating them at last the contracted part could be entered with the fingers and the dilated portion of the organ being pulled backwards was readily allowed to empty itself. Complete recovery took place gradually.—(*Allatov. Lap. and R. G. de M. Veter.*)

INTERESTING CASE OF GLANDERS OF THE MAMMAE [*By the same.*].—In a mare presenting typical symptoms of glanders there were on the skin of the extremities and on the sides of the trunk either painful nodules or glanderous ulcerations, some of which are as large as a dollar piece. Round these the lymphatic vessels form cords as thick as two fingers. The left half of the udder appears swollen and has an ulceration about the size of a fifty-cent piece, from which escapes freely yellowish pus mixed with blood. The supra-mammary glands are swollen and painful. The colt of the mare, two months old, had nasal glanders. The post mortem shows lesions of nasal glanders in both animals and besides of pulmonary in the mother. In the diseased mammae there was on the right side a cavity filled with pus and milk. The supra mammary glands contained no glanderous elements. The author believes that the colt had nasal glanders, inoculated through the diseased udder.—(*Ibidem.*)

ACTINOMYCOSIS OF THE LIVER WITH TRAUMATIC ORIGIN [*By the same.*].—After being slaughtered, a steer in good condition exhibited an enormous liver, weighing 72 kilogs. It was adherent to the rumen and had numerous deposits varying in size from that of a walnut to that of a child's head. At the point of adherence of the liver with the rumen there was a tumor as big as the fist, with a track in its centre. A piece of wire was imbedded in this canal. A probe pushed in the canal penetrated in the liver. The small nodules of the liver were hard, gray, white when cut through, and have little soft clusters. The largest contain thick pus. The little soft centres contain actinomycetes, but these were absent in the large nodules. There was no actinomycotic lesions anywhere else and the case was considered as one of primitive disease of the liver, the parasites having found admission through the presence of the piece of wire.—(*Ibidem.*)

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GERMAN REVIEW.

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By J. P. O'LEARY, V. M. D., Bureau of Animal Industry, Buffalo, N. Y.

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KERATITIS ENZOOTICA IN CATTLE [*Fumagalli*].—Fumagalli saw cattle affected with a keratitis which was transmitted to other cattle and even to sheep and dogs by means of the ocular secretions. In the latter animals the disease was of a mild type and readily curable. In the human subject the malady produced a painful conjunctivitis which was also amenable to treatment in a short space of time. Cows suffered severely, while oxen and bulls were attacked but very slightly, so that they seemed almost immune. The author had not observed the disease in calves, although they stood in the same stables with the infected cows. The first symptoms were those of pruritis and photophobia and almost constant rubbing; the eyelids closing gradually, the conjunctiva becoming hyperæmic and its blood vessels intensely injected. After the lapse of from 12 to 48 hours a severe lachrymation set in and the eyelids were continuously held closed, while the pain subsided somewhat. The cornea was blueish white and opaque. As a rule recovery ensued in from 7 to 15 days. In rare cases the author saw spots remaining on the cornea or ulcerations, and even in a few instances resulting in blindness. Treatment included solutions of sulphate of zinc, with an addition of tincture of opium. The spots upon the cornea were treated with calomel or powdered sugar. As a prophylactic measure Fumagalli recommends the immediate separation of the healthy from the infected animals, as also an energetic disinfection and destruction of the flies, as the latter are the carriers of the infection to other animals.—(*Deutsche Tier, Wochenschrift*, No. 13, 1909.)

FIBROLYSIN [*Vet. Train, Baruth in M.*].—Fibrolysin is an aqueous solution of a double salt composed of one molecule of thiosinnamin and half a molecule of sodium salicylicum. This preparation is put up for the trade by Merck in Darmstadt in sterilized solution (11.5 ccm=1 gramme of thiosinnamin). The three cases cited by the author established proof for the utility of the remedy. It brings about a regressive change in the well-known chronic connective tissue growths. The first case was that of a phlegmon of the thigh, accompanied with cutaneous sclerosis. This condition resisted a four-weeks' treatment with various salves. After

a second injection (subcutaneous) of 11.5 ccm. of the remedy in an interval of four days, almost complete recovery ensued. The second case was that of an ox, as a result of extreme hard work a non-inflammatory, painless, hard, flat swelling about the size of a soup plate formed on the left shoulder. Similarly, after two subcutaneous injections (the last one made in the centre of the neoformation), it almost completely disappeared. As a result of an injury to the hock joint and fetlock joint of a horse a cutaneous sclerosis formed which likewise disappeared after two subcutaneous injections of the remedy. On the basis of these results the author believes that he can recommend the use of fibrolysin in all cases.—(*B. T. W.*, 1909, No. 14.)

FIBROLYSIN IN THE TREATMENT OF CHRONIC TENDONITIS AND TENDOVAGINITIS IN TWO HORSES [*Vet. W. Gottschalk, Schessel, Han.*].—Gottschalk used fibrolysin (that prepared by Merck of Darmstadt) in treating a 14-year-old horse which was no longer serviceable on account of a chronic tendinitis and tendovaginitis with the result that the animal, after 6 injections (subcut.) in the affected limb, at the end of 14 days, was again put to work. The second case was that of a 9-year-old horse which had received 3 subcutaneous injections in the diseased leg and on account of the extreme irritability received 3 more subcutaneous injections in the neck. After 20 days this horse also became serviceable. Gottschalk recommends that the animals so treated be allowed to rest one day in the stall after injection.—(*Deutsche Tier Wochen*, No. 35, 1908.)

FILARIA FLEXUOSA IN DEER.—During the months from January to March a large number of deer died from an extremely chronic disease in the heaths of Rominter. The animals became very much emaciated, presented symptoms of weakness in the sacral region, with staggering gait, finally lying down and dying shortly afterward. At the autopsy the following conditions were observed: Emaciation, lungs normal, isolated distomum in the liver. In the kidneys the larva of the oestrus were visible. In the subcutaneous connective tissues, particularly along the dorsal region, a large number, about 100, nodules, varying in size from a pea to a bean, were found and containing numbers of filaria flexuosa 3-5 c. m. long and  $\frac{3}{4}$  mm. thick. The dura mater cerebri appeared normal, the pia mater very vascular, as also the pia spinalis. The cauda equina contained numerous hemorrhages, atrophy of the gray matter of the cord, particularly in the lumbar region. The white substance was stained yellowish and softened.

Whether the filaria were the cause of death has not been as yet established.—(*Veroff aus d preuss, Jahr, Vet. Berichten*, 1905, II.)

AN ABNORMAL PERIOD OF GESTATION IN CATTLE [*Chapellier*.],—Chapellier performed three obstetrical operations on cows which were of an extraordinary nature as regards the abnormal period of gestation. All three animals were served by the bull at only one particular time, so that there could be no question as to the date of conception. The period of gestation in each of the three cows was 316, 311 and 309 days, respectively.—(*Deutsche Tier Wochen*, No. 9, 1909.)

COLLARGOL AN IDEAL DUSTING POWDER FOR WOUNDS [*Vet. J. Ruegg, Andelfingen*.].—The author applies as a dusting powder on wounds the preparation Collargol (Credé, Dresden) in combination with sugar of milk in the following proportions: Collargol 3 parts, finely powdered sugar of milk 97 parts. This mixture is much cheaper than iodoform. It remains dry and retains its finely powdered condition throughout. According to Ruegg's observations its action is equally effective upon old infected wounds as on more recent ones.—(*Schweizer Archiv für Tierheilk*, Bd. 50, S. 29.)

SCARLET FEVER IN MILK.—Forty-three cases of scarlet fever, attributable to impure milk, have been quarantined in Westminster, England. The milk was part of a quantity collected by a West of England wholesale firm from thirty-one farms and distributed to retailers in London.

When the source of infection was discovered, the whole of the milk supply from the farm was prohibited by the medical officer from being sold until a clean bill of health could be given.—*New York World*, Sunday, July 25, 1909.

ONE of the largest importations of hackney horses ever brought over from England has just been made by Rosuliet O'Neill, of Vancouver, B. C. The collection embraces nineteen mares and the stallions Forest Fire, by Forest Star, son of Forest King, and Brilliant of Cangue, by Lincoln Baronet, son of Garton Duke of Connaught. The Canadian Northwest is at present outstripping every other section of North America in its importations of hackney horses. There, as in the East, the English harness horses have been winning the lion's share of the prizes in the show ring, which has given them the call among breeders and buyers.—*New York Herald*, Sunday, July 25, 1909.



## CORRESPONDENCE.

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PROGRAM TO DATE: A. V. M. A.

HARTFORD, CONN., July 17, 1909.

*Editors AMERICAN VETERINARY REVIEW, New York City, N. Y.*

GENTLEMEN—Replying to your request of recent date, I am enclosing the following for the REVIEW:

In the June issue of your journal I promised to supply the readers of the REVIEW with a preliminary outline of arrangements for the Chicago meeting. As there will be no further opportunity for the fulfillment of such a pledge, I trust that you will find it convenient to spread the following on the pages of the August number.

The local Committee on Arrangements have selected the Palmer House, corner of State and Monroe streets, for headquarters. This hotel, in the very midst of the shopping and business districts is so situated that all parts of the city and the railroad stations are accessible with comparative ease. The rates offered by the Palmer House are: Single rooms, without bath, one person, \$1.50-\$2.00 per day and up; two persons, \$2.00 and \$3.00 per day and up; with bath, one person, \$2.50, \$3.00, \$3.50 and \$4.00 per day; two persons, room with bath, \$3.50, \$4.00, \$4.50 and \$5.00 per day; three persons in a room, \$1.00 a day extra. This hotel is European plan.

Other hotels within a few minutes' walk of the meeting place are: The Kaiserhof Hotel, 262-274 Clark street, \$1.00 per day and up; with bath, \$2.00 per day and up.

The Great Northern Hotel, corner Jackson boulevard and Dearborn street, one person, \$1.50 per day and up, without bath; two persons, \$2.50 per day and up; room with bath, one person, \$2.50 per day and up; two persons, \$4.00 per day and up. They offer some very large rooms accommodating four persons at \$8.00 per day, without bath.

The Stratford Hotel, corner Jackson and Michigan boulevards, rooms with shower bath, \$2.50 per day and up; two in room with shower bath, \$3.50; single rooms with tub bath, \$3.50 per day and up; two in room \$4.00 per day and up.

The Auditorium Hotel, corner Michigan boulevard and Congress street. One person, without bath, \$2.50 per day and up, one person with bath, \$3.50 per day and up.

#### PLACE OF MEETINGS.

The convention will open Tuesday, September 7, at 10 a. m., at the auditorium of the Chicago Musical College, located on the lake front, 246 Michigan boulevard. This is within a few minutes' walk of the Palmer House and other hotels in the downtown district.

The regular sessions will be:

Tuesday, September 7—10 to 12 a. m., 2 to 5 p. m.

Wednesday, September 8—10 to 12 a. m., 2 to 5 and 8 to 10 p. m.

Thursday, September 9—10 to 12 a. m., 2 p. m. to adjournment.

Friday, September 10—9 to 12 a. m., 2 to 4 p. m. Clinic.

#### PRELIMINARY MEETINGS.

Monday, September 6, 11 a. m.—Executive Committee, Parlor "O," Palmer House.

Monday, September 6, noon—Local Committee on Arrangements, Palmer House.

Monday, September 6, 4 p. m.—Association of College Faculties and Examining Boards, South Dining Room, Palmer House.

Monday, September 6, 8 p. m.—Meetings of regular and special committees, Palmer House.

Tuesday, September 7, 8 a. m.—Executive Committee, Parlor "O," Palmer House.

#### EXERCISES OF THE CONVENTION.

10 a. m.—Convention opened by President Rutherford at Chicago Musical College.

Address of welcome, Hon. Fred A. Busse, Mayor of Chicago.  
Response to address of welcome, (a member of the association).

Address by President Rutherford.

Recognition and welcome to delegates from other veterinary organizations.

Roll call.

Submission of the minutes of the previous meeting as presented in the annual report published by the Publication Committee and in the records kept by Secretary Lyman.

Unfinished business.

12 noon—Adjournment for luncheon.

2 p. m.—Association reassembles.

Report of the Executive Committee.

Admission of new members.

Reports of regular committees.

Committee on Intelligence and Education.

Committee on Diseases.

The committee will submit a short general report and special reports from the individual members as follows:

(a) "Diagnosis of Rabies, Its Spread and Methods of Control in New York State," V. A. Moore, Chairman, Ithaca, N. Y.

(b) "The Nature, Cause and Prevalence of Rabies," J. R. Mohler, Washington, D. C.

(c) "Rabies in Canada," Charles H. Higgins, Ottawa, Canada.

(d) "Equine Pernicious Anæmia," A. T. Kinsley, Kansas City, Mo.

(e) "Infectious Diseases from the Meat Inspectors' Point of View," L. Enos Day, Chicago, Ill.

Committee on Legislation.

Committee on Finance.

Committee on Publication.

Committee on Local Arrangements.

Committee on Necrology.

Committee on Resolutions.

Reports of Special Committees.

Committee on Association Seal.

Committee on Revision of Article VI., Section 2, of the By-Laws.

Committee on Visitation to Laval University, Veterinary Department.

Report of Secretary Lyman.

Report of Treasurer White.

Reports of Resident Secretaries.

Discussion of Reports.

Election of Officers.

5 p. m.—Adjournment.

- 8 p. m.—Reception in the parlors of the Palmer House, to which all members, visiting veterinarians, delegates and ladies and friends are cordially invited.

*Wednesday, September 8, Second Day.*

- 8 a. m.—Executive Committee meeting.

- 10 a. m.—Association reassembles.

Reports of committees.

Unfinished business.

Reading and discussion of papers.

- 12 noon—Adjournment.

- 2 p. m.—Association reassembles.

Reading and discussion of papers continued.

- 5 p. m.—Adjournment.

- 8 p. m.—Joint Session of the American Veterinary Medical Association and the Chicago Medical Society, Chicago Musical College.

Discussion of problems in relation to milk and milk hygiene.

“Milk in Relation to the Live Stock Interests,” M. H. Reynolds, St. Paul, Minn.

“Milk in Relation to Health,” W. A. Evans, M.D., Commissioner of Health, Chicago.

“The Relation of the Agriculturists and Dairymen to the Manufacture of Hygienic Milk,” N. Kaumanns, Imperial German Commissioner for Agriculture to the United States, Chicago.

- 10 p. m.—Adjournment.

*Thursday, September 9, Third Day.*

- 8 a. m.—Meeting of the Executive Committee.

- 10 a. m.—Association reassembles.

Reports of committees.

Unfinished business.

Reading and discussion of papers continued.

- Noon—Adjournment to reassemble aboard the steamboat United States.

- 2 p. m.—Association reassembles. Steamboat United States program continued.

*Friday, September 10, Fourth Day.*

- 9 a. m.—Clinic at the Chicago Veterinary College, 2533-2539 State street.

Noon—Luncheon will be served at the college.

1.30 p. m.—Clinic continued.

Exhibit of Pathological Specimens by the Bureau of Animal Industry.

At the Clinic there will be demonstrated a number of surgical operations and cases for clinical diagnosis by well-known veterinarians.

#### SOCIAL FEATURES OF CONVENTION WEEK.

The local committee furnish the following preliminary outline of entertainment for members, their families, visitors and friends:

##### *Tuesday, September 7.*

10 a. m.—Visitors and friends are invited to attend the opening exercises of the convention at the Chicago Musical College.

1 p. m.—Ladies will be served with luncheon at the Art Institute.

8 p. m.—Reception in the parlors of the Palmer House. To this all members, visiting veterinarians, delegates, their ladies and friends are cordially invited.

##### *Wednesday, September 8.*

Ladies will assemble at the Palmer House to participate in an automobile ride through the city parks and boulevards. Luncheon will be served to the ladies at the Chicago Veterinary College, after which they will be conducted on a trip through the shopping districts.

##### *Thursday, September 9.*

10 a. m.—Ladies will be entertained by the local committee.

1.30 p. m.—Members, visiting veterinarians, delegates, their families and friends will go aboard the beautiful new steamship United States, boarding at Clark Street Bridge, for a sail occupying the balance of the afternoon on Lake Michigan. The saloon of the boat is capable of seating comfortably five hundred persons, and it is proposed to continue, if necessary, the regular program of the meeting.

8 p. m.—Annual banquet to be held in the Gold Room, Congress Hotel, Michigan boulevard and Congress street. All invited and a great time promised.

*Friday, September 10.*

The ladies will be conducted to a sight-seeing trip through the Field Columbian Museum.

Among the papers that will be presented at the meeting we have the following:

"Exuberant Granulations in the Horse," B. F. Kaupp, Colorado State College, Fort Collins, Colo.

"The Score Card in Dairy Regulations," George H. Glover, Colorado State College, Fort Collins, Colo.

"Alkalometry, Its Relation to Veterinary Medicine," H. F. Palmer, Chicago, Ill.

"Autogenic Vaccination as an Adjunct to the Operative Treatment of Quittor, Fistula and Other Suppurative Conditions," R. A. Archibald, Oakland, California.

"Nervous Influence in Cause and Cure of Disease," E. A. A. Grange, Ontario Veterinary College, Toronto, Canada.

"What the Agriculturist and Veterinarian Means to the Health and Prosperity of the Nation," W. G. Hollingsworth, Utica, N. Y.

"Subcutaneous Abscess of the Foot," George H. Berns, Brooklyn, N. Y.

"Contagious Abortion," A. T. Peters, Lincoln, Neb.

"Internal Secretions," F. Torrance, Winnipeg, Man., Can.

"Pneumonia and Its Treatment," Mark White, Denver, Colo.

"Experience with Bier's Hyperæmic Treatment," H. Jensen, Kansas City Veterinary College, Kansas City, Mo.

"Diphtheria of Animals and Man," C. C. Lyford, Minneapolis, Minn.

"Trypanosomes and Diseases Caused by Them," Maximilian Herzog, M. D., Chicago Veterinary College, Chicago.

"Bovine Tuberculosis Investigations," C. M. Haring, W. A. Sayer and D. N. Morgan, Berkeley, Cal.

"A Fatal Anemic Disease Among Horses," Winfred F. Mack, Veterinarian, University of Nevada, Reno.

"Conservation of Natural Resources," Wm. Herbert Lowe, Paterson, N. J.

Beside the above papers and contributors, it is anticipated that others will be announced in the official program of the meeting which will in a short time be prepared for distribution.

RICHARD P. LYMAN, Secretary.

## TRANSPORTATION NOTES.

Parties planning to attend the meeting and starting from points within the territory of either the Central Passenger Association or of Western Passenger Association, viz., the territory west and north of Chicago to the Mississippi River, from Kansas City, St. Louis, Peoria and Burlington, north of the Ohio River and east as far as Pittsburg and Buffalo, are advised that the regular fares or Summer Tourist fares from places within these territories to Chicago afford approximately a fare of two cents per mile or even less in some instances in each direction; this amounts to practically the same schedule of fares (fare and one-third) previously conceded as a reduced rate for the occasion.

The Southwestern Excursion Bureau announce that there are on sale daily up to September 30, 1909, and limited to October 31, 1909, Summer Tourist fares equivalent to approximately a two cent per mile round trip rate.

The Trans-Continental Passenger Association offer Nine Month Tourist fares which are in effect daily from the Pacific Coast points; these fares approximate two cents per mile in each direction (equivalent to fare and one-third round trip), and can be obtained from California and Northern Pacific Coast common points, viz., Bellingham, Seattle, Everett, Spokane and Tacoma, Washington, from Portland, Oregon, from New Westminster, Vancouver and Victoria, British Columbia, direct to Chicago. Should those contemplating attendance apply at stations on the Pacific Coast from which the nine month fare is not in effect, which may be the case at very small, unimportant stations, the local agent at such a place will cheerfully ascertain and advise such parties of the nearest point to this station from which such fare does apply both going and return, to which place a local daily rate ticket may be purchased. Tickets for the reduced nine month tourist fares are sold only in California, Nevada, Oregon, Washington and west of and including Mission Junction, British Columbia; also from Nelson, Rossland, Sandon, Kaslo and Grand Fork, British Columbia, places known as Kootenay common points.

Other passenger associations have not found it convenient to give reduced schedule rates for the meeting dates, but in this connection it should be remembered that reduced fares throughout almost the entire continent places the present passenger traffic rates nearly equal that formerly obtained by the reduced rate of fare and one third.

*Editors AMERICAN VETERINARY REVIEW, NEW YORK:*

GENTLEMEN—Having read a great deal recently by various authors in numerous veterinary magazines as well as in your highly valued REVIEW, of different methods and suggestions whereby the standard of our profession may be raised, I beg space in your valuable pages for publication of a few conclusions which I have finally arrived at after a great deal of deliberate forethought, and which may or may not have the desired influence over certain veterinary colleges.

Most authors recommend rigid state board examinations, which no doubt, are quite proper, but to which I take some exception. My opinions are:

1st. I consider those desirous of raising our standard have started at the wrong end, *i. e.*, instead of enforcing graduates of any college to face a state board examination, it should be regulated by a standard government matriculation.

2d. That the board of matriculant examiners should be composed of qualified men selected from all states, but having headquarters, say, at Washington, D. C.

3d. That no veterinary college should be chartered with the privilege of holding its own matriculation.

4th. Intending matriculants should be informed to apply to the official examining board for information regarding qualification dates, and places where such examination would be held.

5th. In the event of applicants passing such official examination, they should be provided with a certificate entitling them to entrance to any veterinary college in the United States that they may choose, without further examination.

My reasons for making these humble suggestions are well founded by experience; not merely personal, but of several others with whom I have come in contact. For instance, some veterinary colleges state in their curriculum that a matriculation will be necessary, for which a fee of five dollars (\$5) will be charged.

Needless to say, the fee is always collected, but the examination is more often a farce and consists in simply signing your name on the register and paying your money without any further parley.

The reason for this is quite clear to a great many veterinarians.

If one college turns down a prospective student he would simply take a walk and enter another college where they would



receive him with open arms. Thus the first college has lost in the vicinity of three hundred dollars (\$300) providing he puts in three years and graduates.

As the majority of veterinary students are poorly educated, and as they are attending in such large numbers, and in many instances being kicked through, it is no wonder the laity have such little respect for the average vet. and are becoming acquainted with the fact that most veterinary colleges are simply large diploma mills.

It seems a pity that so many qualified veterinarians have secured a charter and are using it as a purely mercenary proposition, and have long ago forgotten the fact that it is "quality" that counts and not the despised, unqualified "quantity."

The very men who should be instrumental in elevation of our standard are seemingly stamping it under their feet and making piles of money by doing so.

It is not uncommon to meet graduated veterinarians in various occupations, such as teamsters, stable bosses, hotel and saloon proprietors who of course are always accosted as "Doc" by their crude friends. No wonder that a few who have, and are still endeavoring to bring our chosen profession to a level with the M. D., are driven to desperation and are tempted to lower methods of making a livelihood, such as proprietary medicines, stock foods, etc., and abandon all attempts to raise our noble profession. That some society may be formed with intelligent, honorable gentlemen as leaders is the dream of every decent veterinarian, and that the object of its existence will be to abolish all such grafting diploma mills to which I have reference.

Trusting you will favor me with the valuable space I have requested, and begging forgiveness for writing such a long letter on which much more could be said, I have the honor to remain,

Sincerely yours,

DR. H. S. CAWSEY,  
(Box 281) Regina, Sask., Can.

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PROVIDENCE, R. I., July 13, 1909.

*To the Editors of the AMERICAN VETERINARY REVIEW:*

DEAR SIRs—Will you kindly publish the following information in the columns of your very valuable book, the AMERICAN

VETERINARY REVIEW, to protect the veterinary surgeons who subscribe for this book from an impostor who represents himself as Capt. A. L. Picquet, veterinary surgeon. I enclose his card.

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CAPT. A. L. PICQUET, R.

F. N. C. V. S.

VETERINARY SURGEON

Formerly in U. S. Service

Graduate from France's National School of

Veterinary Surgery

Registered or Licensed in Eleven States.

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References—U. S. Army, French Cavalry,  
Egyptian Cavalry

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He came to the stable where I have my office on Thursday evening, June 17, and told me of his travels through France and other parts of Europe, Asia and Africa, also all over the United States and particularly the southern states, and giving Galveston, Tex., as his home, and also having a very large practice there. He also represents himself as authority on tuberculosis in the cattle and swine.

He remained here until June 22, and on that date I was compelled to go away on business and he accompanied me to the train. After I had gone he went directly back to the stable and told the stable foreman he would like my instruments to go over to Pawtucket to do some work. And the foreman, contrary to my instructions, unlocked the room where I kept my instruments and allowed him to take them without an order from me. So, consequently, I am out of \$42 worth of instruments and the roll which the instruments were carried in, as that person has not been seen or heard from since.

And also on the date of June 22, he went to one of our prominent veterinarians, Dr. J. T. Cunningham, of 12 and 14 Garden street, and borrowed some other instruments, of which I shall give a list later, and promised him to return them by twelve o'clock that noon. But those are also gone with mine, as the missing parts of my set were borrowed at Dr. Cunningham's to fill out his load of stolen goods, which were all as good as new,

with the exception of a Haussmann and Dunn molar cutter, which has seen a lot of wear and but very little care, and the handles to correspond with cutters.

The following is the list of instruments taken, manufactured by the Detroit Instrument Co., Detroit, Mich.:

1 curette, 1 open molar cutter, 1 molar forcep, 1 large root forcep, 1 small 13-inch root forcep, 1 splinter forcep, 1 trephine forcep, 1 tooth drill, 1 sounding hook, 1 abscess lance, 1 dental or bone saw, 1 leather roll, chamois lined, color yellow.

Dr. J. T. Cunningham's instruments:

1 pair of Detroit handles, also 1 pair of Haussmann and Dunn handles.

I will now endeavor to give you a description of this person. He is a man about fifty years of age and stands about 5 feet 4 or 5 inches in height, and had a very heavy moustache and chin whiskers, sprinkled with grey; cheeks smoothly shaven. He wore a black derby hat, a brown and black suit of clothes with the brown stripe most prominent, and black shoes, and spoke with a marked French accent; appearance not very neat.

Hoping this information will be of use, I beg to remain,

Respectfully yours,

E. W. VAN VRANKEN,

227 Dean Street, Providence, R. I.

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BACK in Pennsylvania they have a Jersey bull that goes to harness, and hitched to a sulky is reported to trot a mile in 2.40 and under the saddle is claimed to go even faster.

He is to be exhibited at some of the leading fairs this season as a special attraction.

Dan Patch has at last gotten a rival and the bull, Robert Patch, is out for a division of honors.—*Horn and Hoof*, June, 1909.

BEFORE the era of the Brahmin bull in Texas, the Lone Star State cattleman prided himself on his longhorns—in fact the longer the horns could be grown the greater was his pride. Meat didn't count! He reached the acme of his glory when one longhorn grew horns which measured as follows: From tip to tip, 7 feet 4 inches, by following the horns, 9 feet 7 inches, and 15½ inches in circumference close to the head. Since the advent of the Brahmin or Sacred Bull of India, the Texas cattleman is finding meat more profitable than horns.—*New York World*, Sunday, July 25, 1909.

## SOCIETY MEETINGS.

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### NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The twentieth annual meeting will be called to order at 10 a. m. sharp Wednesday, August 25, in the amphitheater of the New York State Veterinary College, Ithaca. After the address of welcome by Hon. Randolph Horton, Mayor of Ithaca, responded to by Prof. James Law, of the society, and the reading of minutes, and president's address, the regular routine of business, committee's reports, etc., will be disposed of with as much expedition as possible, and the reading of papers will begin. Up to date of this writing, July 20, Secretary De Vine and Chairman Fish of the local committee have the following to offer:

"Experiences with Foot and Mouth Disease," J. L. Wilder, Akron, N. Y.

"Some Remarks on Venereal Disease in Cattle," J. G. Wills, Chateaugay, N. Y.

"Laboratory Demonstrations of Interest to Practitioners," W. J. Taylor, Ithaca, N. Y.

"Origin and Development of the Dairy Cow" (Illustrated), H. H. Wing, President of the State Dairymen's Association.

A bench luncheon and smoker at 9 p. m. will conclude the first day's session.

At 9.30 a. m. on the morning of the second day, August 26, the program will be continued as follows:

"Anemia in the Horse," W. B. Mack, Reno, Nev. (By invitation.)

"Types of Horses," F. C. Grenside, New York City.

"Certified Milk," Mrs. C. H. Cocke, New York City.

"Cerebro-spinal Meningitis in the Horse," H. J. Milks, Owego, N. Y. (By invitation.)

"Making Market Milk Under Veterinary Inspection," Claude D. Morris, Binghamton, N. Y.

"Light and Ventilation," D. H. Udall, Ithaca, N. Y. (By invitation.)

"A Practitioner's Experience with Echinacea," D. D. Le Fevre, Newark, N. Y.

"The Veterinarian of To-day and What He Advocates," W. G. Hollingworth, Utica, N. Y.

"Eserine," J. H. Taylor, Henrietta, N. Y. (By invitation.)  
Adjournment at 6 p. m.

8 p. m.—Banquet. The evening to be devoted to a discussion of rabies. A paper will be presented upon "The Control and Extent of Rabies in New York State," by J. F. De Vine, Goshen, N. Y.

The third day, Friday, August 27, will be devoted exclusively to a clinic at the New York State Veterinary College Hospital, where the members and visitors are requested to assemble at 10 a. m. There will be a number of cases for diagnosis and surgical operation. The list is not complete, and therefore cannot be published at this time, but the following subjects are already promised: Cryptorchid, roaring, hematuria, spaying of different species of animals, etc.

Suitable entertainment will be provided for the ladies, and they are cordially invited to attend.

Society Headquarters, New Ithaca Hotel. European and American plans.

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## MISSOURI VALLEY VETERINARY ASSOCIATION.

The fifteenth annual meeting of the Missouri Valley Veterinary Association convened in Omaha June 16 and 17, 1909. It was the most successful meeting of this association ever held in the northern part of the Middle West, both in point of attendance and number of names added to the membership role. About seventy-five veterinarians were in attendance.

THE BUSINESS MEETING.—The board of censors favorably passed upon the names of 84 applicants, all of whom were duly vouched for by members, and they were duly elected to membership.

The following officers were elected for the ensuing year:

A. T. Kinsley, President; W. H. Tuck, First Vice-President; L. U. Shipley, Second Vice-President; B. F. Kaupp, Secretary-Treasurer. C. E. Stewart, R. Ebbitt, R. F. Bourne, E. Biart, C. R. Walters, Board of Censors.

The following committees were created at this meeting and appointments made by the president-elect as follows:

Infectious Diseases—G. H. Glover, Chairman; D. F. Luckey, P. Juckiness, H. E. Bemis, L. L. Lewis.

Therapeutics—H. Jensen, Chairman; D. C. Scott, H. E. Kingman, H. B. Treman, H. Bradley.

Surgery—J. S. Anderson, Chairman; H. McConnell, R. R. Dykstra, C. E. Steel, G. J. Collins.

Food Inspection—D. M. Campbell, Chairman; F. Jellen, Meat; L. Champlain, Dairy; C. P. Liegerot, Hygiene; O. E. Troy.

Necrology—S. Stewart, Chairman; G. B. Young, J. I. Gibson.

It was moved, seconded and carried to revise the constitution and by-laws and the president empowered to appoint said committee.

Committee on Revision of the Constitution and By-Laws—H. Jensen, Chairman; H. C. Simpson, A. T. Peters.

The board of censors made a report of the auditing of the accounts of the secretary-treasurer. This report showed \$196.00 in the treasury. The report was accepted.

The censors then made the following report: Recommended that the name of Dr. J. Vincent be dropped from the membership roll because of his not abiding to the professional ethics of this association. It is further recommended that the secretary of this association notify Dr. J. Vincent, of Shenandoah, Iowa, of this action by registered letter. This recommendation was accepted and adopted.

The secretary then read a letter from Dr. R. P. Lyman, Secretary of the American Veterinary Medical Association, requesting the appointment of a delegation to its annual meeting which will convene in Chicago September next.

It was moved, seconded and carried that the president appoint a committee of five to represent this association at that meeting.

Delegates to the A. V. M. A.—S. H. Johnson, Iowa; D. M. Campbell, Kansas; L. A. DeCow, Nebraska; E. Biart, Kansas; H. McConnell, Missouri.

It was moved, seconded and carried that a committee be appointed to write a suitable memorial to the late Dr. Sidney L. Hunter, and that as the president, Dr. J. I. Gibson, had been a classmate of the deceased, that he be included in this committee. The president appointed on this committee Dr. S. Stewart, Dr. Hal. C. Simpson and Dr. B. F. Kaupp.

NECROLOGY REPORT.—Whereas, Death has removed from among us on February 27, 1909, Dr. Sidney L. Hunter, a much-beloved member of the Missouri Valley Veterinary Association; a member who was instrumental in the formation of the association; one who gave his earnest and whole-souled support by attending its meetings whenever possible, by serving the association as its first secretary and in all other capacities whenever called upon to do so, be it therefore

Resolved, That he has set a standard as a member, a citizen and a Christian gentleman which will serve as an inspiration to each of us, and in striving to emulate him we can reflect great credit upon our profession; and be it further

Resolved, That this association express to his family our high appreciation of Dr. Hunter's life and work and our sincere sympathy in their bereavement.

J. I. GIBSON,  
S. STEWART,  
HAL C. SIMPSON,  
B. F. KAUPP,  
Committee.

The president appointed Dr. E. Biart, of Leavenworth, Kansas, to convey the typewritten copy to the bereaved family, who live in that same city. The secretary-treasurer then read his annual report.

A communication was then read from Dr. J. H. McNeil, of Columbus, Ohio, who was formerly at Ames, Iowa, and who desired to sever his connections with the association on account of the great distances from the meeting places. It was moved, seconded and carried that the resignation be accepted and that Dr. J. H. McNeil be made an honorary member of the association, on account of his previous active services in the association.

THE PAPERS.—The following program was carried out. Many of the papers brought out lengthy discussions. "Extra Uterine Pregnancy," Dr. E. Biart; "The Cardiac Mechanism and How It Is Influenced by Drugs," Dr. R. F. Bourne; "The Score Card System of Dairies," Dr. Geo. H. Glover; "Rupture of the Oesophagus," Dr. B. H. Merchant; "Cathartics in Veterinary Practice," Dr. D. M. Campbell; "Poisoning in Horses from Ensilage," Dr. L. C. Beaumont; "Equine Pneumonia," Dr. C. L. Barnes; "Hemorrhage Following Castration," Dr. Wirt R. Barnard.

THE BANQUET.—The annual banquet was held in the Banquet Hall of Hanson's Cafe at 8 o'clock P. M.

THE TOASTS.—Dr. S. Stewart, Toastmaster. "Setting the Hen," Dr. A. T. Peters; Song, Dr. J. I. Gibson; "Sera and Vaccines," Dr. A. T. Kinsley; Discussion, Dr. H. Jensen; State Boards, Dr. J. S. Anderson.

THE CLINIC.—The clinic was held at the hospital of Dr. D. C. Scott, 2810 Mason street. Eleven cases in all were presented.

A black mare affected with high ring bone on both fore limbs was presented and double median neurectomy was performed.

A fibroma at the point of the shoulder as a result of an improperly fitted collar was removed from a black gelding by Dr. Haxby.

A bitch was presented for oophorectomy. The H. M. C. anæsthetic was used and the operation performed by Dr. D. M. Campbell.

A pig with prolapsus of the rectum and a sow with hernia were also presented.

The clinic occupied the entire afternoon.

The association adjourned to meet in Kansas City, February, 1910.

B. F. KAUPP,  
Secretary.

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## MAINE VETERINARY MEDICAL ASSOCIATION— SECRETARY'S REPORT.\*

Once a year business methods require all firms, corporations or business houses to take account of stock, to balance the cash book, and find out the result of the past year.

As secretary of this association, I wish to make a "resumé" of our work during this last year, or rather of what we have attempted to achieve.

Six interesting papers have been read and five new members have been admitted, making a total membership of 40. I have collected \$113.92, which sum has been remitted to the treasurer. Sixteen delinquents can be found owing from \$5 to \$28 each.

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\* Presented to the M. V. M. A., at Augusta, Jan. 13, 1909.



Two applications for membership have been rejected during the year. Two very important resolutions were adopted, and the proper authorities were notified, viz.: The association condemned the application of a second test on tuberculous cattle having shown a typical reaction on the first examination. Second, the requirement of a certificate of tuberculin test with cattle for exhibition at our state fair was also recommended. Nothing has been done; the authorities have not even seen fit to answer your secretary.

At this present time, through the efforts of this association, a committee appointed by the State Board of Health, is studying the ways and means to improve our method of dealing with bovine tuberculosis. Let us hope that it will accomplish some good.

From proper sources I am informed that 21 non-graduates or quacks have been doing veterinary work for the Cattle Commission during this last year and have been paid by the state for their services. One of our Cattle Commissioners has tested himself over 500 head, and the Cattle Commissioner has employed agents to do veterinary work who are not even registered by the State Board of Veterinary Examiners.

Some time ago the *Lewiston Journal*, during the excitement in the City of Lewiston caused by the condition of their milk supply, suggested that the milk inspection should be done by state authority, insinuating that local veterinarians could not be trusted.

In presence of these few facts, I am asking myself many questions. How long are we going to stand it? Has the time arrived for the veterinary profession of Maine to be heard? Are we united as a body? Are we competent as business men and confident of ourselves as veterinarians to raise our voice, to inform the public of Maine, what should be done? It seems to me that it is our duty, as good citizens, to do so, when all over the world people of all classes are interested in these great questions of sanitary measures, and mostly this dreadful tuberculosis. Something ought to be done. Some new legislation is needed.

Our milk inspection laws are misleading and should be amended. We have no meat inspection for what we consume, while federal laws require an inspection for meat shipped out of the state.

The Cattle Commission is appointed by the governor as laymen to look after the business interest of their department and not to enter into veterinary practice.

Our veterinary bill enacted in 1905 has not been very satisfactory, neither to the public nor to the veterinary profession, and I can assure you that the members of the Board had all they could do to prevent its repeal; and let us hope, when we are stronger and more appreciated by the public, the veterinary bill will be improved.

Before closing, I wish to call your attention upon another matter which I think will interest you. It is in regard to accident insurance. I have never carried any accident policy until this year. For many years I have argued with several agents that the veterinarian was not properly classed. As you are aware, the profession is classed with firemen, railroad employees, hack drivers, brewery distillers, etc. I always maintained that a graduate veterinarian should be classed with the country physician. So I have at last succeeded to have the Portland Casualty Co. to accept us as first-class risk, and have them to differentiate the graduate veterinarian with the non-graduate.

During the year I have had correspondence with the members of this association. To those who have answered promptly I wish to thank them, and those who never reply to a letter, I feel sometimes like saying, "Go back to school."

A. JOLY, Secretary and Treasurer.

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## VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY.

At the June meeting of the Veterinary Medical Association of New York City held in the lecture room of the New York American Veterinary College, New York City, Dr. W. Reid Blair, Veterinarian and Pathologist of the New York Zoological Society, gave a talk on the "Diseases of Wild Animals in Captivity."

The doctor's remarks were illustrated by sixty-five lantern slides showing methods of control and operations on various wild animals in the New York Zoological Park. Among the slides shown were operations on the elephants, rhinoceroses, alligators, bears, wild-cats, baboons, monkeys, deer, antelopes, ostriches and various other wild species.

A number of slides were also shown illustrating various pathological conditions affecting wild animals in captivity. Dr. Blair's remarks were as follows:

The New York Zoological Society was the first to establish, on a permanent basis, a medical department in connection with a Zoological Park. The objects of this department are to extend our knowledge of the care and health of wild animals in captivity; to find the causes of various diseases and the means which should be taken for their prevention and cure, as may be determined by systematic observation and record, and by experimental treatment.

This, besides being humane, is part of an economic administration. An animal properly housed, and well cared for, also needs scientific medical attention, because all animals in close confinement are peculiarly liable to certain kinds of diseases.

We are especially fortunate in having on the Executive Committee of the Zoological Society thoroughly scientific men, who appreciate the value of scientific research in comparative medicine and pathology, and who are determined to take the utmost advantage of the scientific opportunities which this large collection of animals affords for discoveries which would be of importance not only to the animals, but to man.

It is proposed to collect all observations of the members of the medical staff of the Park, as well as of the curators, and to publish them in book form, as a comprehensive work on the care and treatment of wild animals in captivity; a work which is very much needed, for it is a surprising fact that no such book showing the experience gained from Zoological Park management has ever been published.

One fact which has greatly impressed me in the study of the diseases of wild animals is that, in order to obtain the best results, the statistical method should be used to a great extent. By this method we would gradually arrive, more or less unconsciously perhaps, at a special system of pathology and therapeutics peculiarly adapted to the diseases of wild animals in confinement.

The collection of a large number of cases, with careful analysis of recorded data, can but yield valuable conclusions.

Post-mortem examinations are systematically made on all animals dying in the Park. We find that these necropsies can be made without injury to the carcass for the taxidermist or for museum purposes, while at the same time facts of the greatest scientific importance are constantly being discovered. Since a considerable number of animals die without showing any symptoms of disease during life, it would be impossible to intelligently ascribe the cause of death without these examinations.

The records of these examinations are carefully filed, and it is needless to say that we possess a collection of pathological data, bearing on the diseases of wild animals in captivity of the greatest value, both practically and scientifically. The increased knowledge and experience in the prevention and treatment of diseases and the careful system of quarantine provided for new animals before placing them on exhibition, has resulted in a constantly declining death rate. Two years ago Dr. P. Chalmers Mitchell, Secretary of the London Zoological Gardens, visited several of our American Zoos, and was impressed by the work of the medical department in connection with several of them, and on his return to London, his first official act was the establishment of a Medical Department in connection with the Garden. In the first year of the Department's existence, deaths from tuberculosis alone were reduced from 35.8 per cent. to 21 per cent., and during the past year an even greater reduction has been made. In the last Annual Report of the Zoological Society of Philadelphia the following appears: "It is gratifying to observe that under the preventive measures which have been developed since the opening of the Laboratory of Pathology, the relative mortality from tubercular diseases in the Gardens has been reduced to a point below that of human records of this city." I mention these facts in order to show just what has actually been accomplished by scientific methods. Since 1902 tubercular diseases among the animals in the New York Zoological Park have played a very unimportant part in the death rate. This is due (1) to the careful selection of animals purchased; (2) the hygienic buildings in which they are quartered; (3) the rigorous exclusion of all animals known or suspected to be tubercular from the cages of the uninfected; and (4) the immediate isolation of any animal upon the first signs of disease, the cages being washed and thoroughly disinfected after the removal of such animals, and before healthy ones are placed in these compartments.

Our experience soon taught us that in order to successfully combat the introduction of diseases to the Park, especially those of a contagious nature, a most complete and efficient quarantine system was absolutely necessary. Too great faith cannot be placed in port inspection for the detection of contagious diseases in wild animals. It is practically impossible for any inspector to detect disease in a latent form, or to discover whether apparently healthy animals have been in contact with those which were unhealthy. Moreover, it is a practical impossibility to obtain

even a good view of an animal when it is crated for a long journey, and the first place in which real inspection is possible is the quarantine quarters. The introduction to the New York Zoological Park of a small ferret suffering from distemper was the source of a severe epidemic of this disease among wolves, coyotes and foxes, with a loss of over 90 per cent. of the infected animals. So it will be seen that a grave form of disease may be introduced and communicated by apparently mild or trivial cases.

The value of the quarantine system has been many times demonstrated; for animals which have died within a few days of their arrival at the Park, upon autopsy have revealed a highly contagious disorder, which would no doubt have been very disastrous and far-reaching if introduced into cages of healthy animals. In some instances it has been found practicable to place newly-arrived animals on exhibition at once in isolated corrals or cages, but an animal is never placed in an enclosure or cage with healthy ones until we are reasonably sure that the new arrival is perfectly healthy. Disinfection as a preventive of disease plays an important part in the medical work of the Park. The frequent systematic and thorough disinfection of buildings, corrals, dens and cages, whether there have been contagious diseases or not, has, in my opinion, been a great factor in keeping the Park free from anything like an epidemic.

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## MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

ADDRESS OF PRESIDENT T. G. DUFF.

*To the Officers and Members of the Michigan State Veterinary Medical Association:*

GENTLEMEN—We are now assembled for the twenty-seventh time in annual convention for the purpose of exchanging ideas as to the best way of advancing the interests of the veterinary profession in Michigan. As far as my address is concerned, it will be very brief, just a few suggestions as they have come to me.

As far as diseases in a general way are concerned, there has been very little change in the territory that I have covered.

The outbreak of foot and mouth disease and other contagious outbreaks will be fully covered by the report of committee on diseases.

Our secretary and treasurer, Dr. J. Black, has informed me that he will not be a candidate for renomination, a fact which I very much regret, and in case we cannot prevail on him to accept the office again, I would suggest that great care be exercised in choosing his successor, as much of the strength and prosperity of the organization depends on that officer.

I think the office of treasurer should go to another individual, as the present constitution was adopted when our association was small. As the organization grows, the advisability of this, in my mind, becomes more important, and I would suggest that the treasurer be required to furnish bonds, as a matter of precedent if nothing more. Again, it would make one more active officer who would feel the responsibility of the success of our association.

I would suggest that a delegate be elected by our association to attend the meeting of the A. V. M. A., and this association should assist in defraying his expenses. We have much difficulty in procuring a direct report of the proceedings of that important annual gathering and this step would insure that for us.

Another important matter is some method of prosecuting illegal practitioners. This matter should receive careful consideration, and I am glad that Dr. Gohn, who has had much experience along legislative lines, has consented to open the discussion.

I think the time is ripe for referring the nomination of officers to the hands of the executive committee, as we all know it is very easy to make mistakes in the election of our officers. I would recommend that this method be tried this coming election.

Evidently our plans for a summer meeting will be compelled to lay over another year, as the next meeting of the A. V. M. A. will be held in Chicago in September next, and any of our members who would attend a summer meeting of our association, would be more than pleased of this opportunity to attend our American gathering.

Death has again alarmed our outer door, and taken from us two of our much esteemed members in the persons of Dr. A. E. McBeth, of Battle Creek, who died on August 21 of apoplexy,

and Dr. W. F. Carr, of Bay City, who was killed by the accidental discharge of a gun in a lumber camp up north. I trust our committee on resolutions, who will be appointed later, will draft suitable resolutions.

I trust that we will have a very enjoyable and profitable meeting.

#### REPORT OF COMMITTEE ON DISEASES.

Your committee on disease beg to report that there has been something doing this past year in dealing with some contagious and infectious diseases. The disease which has attracted most attention, and particularly so on account of radical measures taken by the United States Government and the co-operation of the State Live Stock Sanitary Commission, is foot-and-mouth disease.

Another disease quite prevalent in certain parts of this state, and which should claim the attention of the veterinary practitioner is hog cholera. This disease seems to be on the increase. It is often met with on post-mortem inspection at the abattoirs. Prof. Marshall's discussion of this disease will give you much valuable information, and impress upon you the necessity of giving some attention to its existence. Should some practitioner ask what to look for on post mortem, would say besides the appearance of the internal organs, notice the hemorrhagic condition of the lymphatic glands of the carcass, the skin lesions, the petechial spots of the kidney, and the dark or black appearance of the bones, especially of the vertebræ on cross section. One or several of these lesions may be present.

The disease contagious abortion, present to some extent, will be discussed by a co-worker of Prof. Marshall.

Besides these diseases, more or less of the following are present in the state: Influenza, strangles, glanders, rabies, sheep-scab, tuberculosis. Then, in the western part of the state, what is known as the Lake Shore disease in cattle, though not proved to be infectious. In the northern part of the state the summer disease of horses seems to be present every year.

Rabies in cattle in Berrin County and Cass County have been reported to have occurred according to the report of the State Live Stock Sanitary Commission. And in dogs, numerous cases have occurred in different parts of the state.

Glanders is one of the diseases that makes its appearance occasionally. The State Live Stock Sanitary Commission re-

ports five horses destroyed in 1908, and there have been a few besides that, I think; so it would be safe to say that there have been seven or eight cases during the year. And the disease has occurred in different parts of the state. It shows that a watchful eye is necessary for the veterinary practitioner, and he ought not to leave a suspicious case go without the mallein test.

Sheep-scab is said to have been present in the Thumb District in the eastern part of the state. Not any cases known to exist at the present time.

One more disease needs our consideration, last but not least, as it is the most prevalent disease in Michigan as well as in other states. The disease, tuberculosis, is one some practitioners never get bothered with, though they treat those very animals having it for other ailments.

In the report of the A. V. M. A. of 1908, it is noticeable that the Committee on Diseases spent nearly all its time and energy, as far as making a report goes, to glean facts on the disease, tuberculosis. This has induced me to write about this disease again. It is the one disease we notice on post-mortem in the packing houses, but as I have given the post-mortem conditions met with in previous reports I shall not endeavor to burden you with any details this time, as the conditions met with and number of cases are about the same, with possibly a slight increase.

In the report of the A. M. V. A., Dr. J. R. Mohler, Chief of the pathological division of the B. of A. I., relates some interesting experiments in the way of communicability from man to animal and animal to man. He speaks of the experiment of the Royal British Commission: "A cow was injected with human tubercle bacilli under the shoulders, and began excreting tubercle bacilli from the mammary glands in seven days, and continued to do so until its death from generalized tuberculosis thirty days after inoculation." Dr. Mohler also speaks of experiments in Germany where meat from cattle that had localized tuberculosis was fed to animals, and it did not produce tuberculosis in those animals. But meat fed to cattle that were condemned, having generalized tuberculosis, produced the disease.

Possibly most of you have read the article by Dr. M. H. Reynolds, on the control of tuberculosis, addressed before the International Congress of Tuberculosis at Washington; you will notice how immense an undertaking it would be to eradicate tuberculosis in Michigan. It would cost millions of dollars. If



with a few million dollars the disease could be eradicated, I think it would be well worth the money at that. According to his figures, it would take all of the registered graduated veterinarians in Michigan all their time all the year round to test cattle and could not test them all then. And one test is not enough; several tests are necessary. The way the disease is communicable from man to animals would in some cases require another test. And cases which are latent and do not react the first time would react at a second test.

Thirteen states are now enforcing laws regarding entrance of tuberculous cattle. They require the tuberculin test or certificate that the cattle have been tested before being regularly admitted to the state.

There is an interstate law in the United States now that cattle known to be tuberculous cannot be moved from one state to another.

Every veterinary practitioner should acquaint himself with the method of testing cattle for tuberculosis; it is likely Michigan will before long have some law in regard to testing cattle, and if not, there will be individual farmers and dairymen who are progressive enough to have their herds tested anyway. Some methods of testing are not correct, such, for example, as were conducted in Grand Rapids last fall by veterinary students. If the instructions are followed which accompany the tuberculin, the test will be all right, but when the temperature is only taken four times after injection of the tuberculin and the last only sixteen or eighteen hours after injection, the test is not reliable. To see that the right amount of tuberculin is injected and done right is an important factor. The reason so much opposition has been raised against testing with tuberculin is because the wrong methods have been used. It is also very important that the veterinarian should know what to look for on post-mortem examination, as the disease is sometimes confined to one gland, one of the cervical, hepatic, bronchial, or mediastinal glands, and those will have to be incised with the knife to see it. As fowls and all kinds of birds are subject to the disease, a knowledge of the lesion of the disease post-mortem may come handy even in a kitchen post-mortem.

Dr. O. E. Dyson, of Chicago, has an article on tuberculosis in his report on diseases for the A. V. M. A., which, though not giving facts and figures about the disease, is a most interesting article. He does some grand reasoning, and such arguments as

are brought to the reader's mind cannot help but instil in him the desire to join in the battle for eradication of the disease.

Respectfully submitted,

Z. VELDHUIS,  
Port Huron, Mich.

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## THE OHIO SOCIETY OF COMPARATIVE MEDICINE.

August 25 and 26, Upper Sandusky, O.

### PROGRAM.

Wednesday, August 25.

Paper, "Meat and Milk Inspection," J. F. Planz, V. S., Akron, O.; C. H. Case, V. S., Akron, O.

Paper, "The Veterinarian on Boards of Health," A. S. Cooley, V. S., Cleveland, O.

Discussion of both papers, opened by T. Clark Miller, M. D., Massillon, O.

Lecture, "The Use of a Modification of the Wright-Douglass Vaccines in the Treatment of Animal Diseases," J. McL. Phillips, M. D., Columbus, O.

Discussion, opened by W. J. Stone, M. D., Toledo, O.

Reception, 5 to 7 p. m. Banquet at 8 p. m.

Thursday, August 26.

8 a. m.—Observation of Tuberculin Test—Bovine. Post-mortem of Tuberculosis—Bovine—as per diagnosis of above test. Committee: C. B. Frederick, V. S., Canton, O.; T. Clark Miller, M. D., Massillon, O.; A. E. Follet, M. D., Granville, O.; R. J. Morgan, M. D., Van Wert, O.; W. E. Clemons, V. S., Granville, O.

1.30 p. m.—Lecture "The Relation of Bovine Tuberculosis to Man," David Steward White, V. S., Columbus, O.

Discussion, opened by Lewis A. Levison, M. D., Toledo, O., and T. Clark Miller, M. D., Massillon, O.

7.30 p. m.—Lecture, "Serum Therapy, or The Practical Application of Bacteriology in the Cure of Disease," Ezra Read Larned, M. D., Detroit, Mich.

Discussion, opened by R. C. Longfellow, M. D., Toledo, O.

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GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

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The twelfth annual meeting of the Genesee Valley Veterinary Medical Association was held at Rochester on Thursday, July 8, 1909. Twenty-four members were present.

A very interesting clinic was held at Dr. A. George Tegg's infirmary, commencing at 11 a. m. and lasting until 5 p. m. The meeting then adjourned to the Rochester Club, where a dinner was given by the association. At the meeting after dinner, action was taken toward establishing an associate membership, giving all the privileges of the association, excepting voting or holding office, this membership being open to all properly qualified men living *outside* of our territory.

The next meeting of the association will be held in Rochester the second week in January.

J. H. TAYLOR, Secretary.

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KING EDWARD'S Minoru won the Derby, the classic turf event of England, on May 26. The American entry, Sir Martin, was the betting favorite, but fell soon after the start and lost his chance.

TWELVE thousand dollars was recently paid at public auction for the imported Jersey bull Viola's Golden Jolly. This is the highest price ever paid for a Jersey bull at auction.—*Hoof and Horn*, July, 1907.

A MILK VENDER.—There is a hygienic slot machine which furnishes hot or cold milk to the school children of Germany. One slot furnishes paper cups which are thrown away after being used. When the coin is placed in the slot, the milk tap protrudes from the box, and when a lever is released it disappears again to be rinsed by a device which cleans it thoroughly. When hot milk is desired, an indicator is moved over the "warm" mark, and enough milk to fill one of the cups leaves the tank and runs over a flat surface under which a spirit lamp is burning. The lamp lights when the indicator is moved. As is usually the case in Germany, the sanitary regulations are fulfilled to the letter. Once a day the milk tank and its connections are taken out and cleansed thoroughly.—*Popular Mechanics*.

## NEWS AND ITEMS.

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### MELBOURNE UNIVERSITY VETERINARY SCHOOL COMMEMORATION DINNER.

A dinner to commemorate the establishment of a Veterinary School at the Melbourne University was held on Tuesday, March 30, 1909, at the Cafe Francais, Melbourne.

The Chancellor of the University, Sir John Madden, K. C. M. G. (Chief Justice of Victoria), was in the chair, and amongst those present were the Vice-Chancellor (Sir Henry Wrixon, K. C. M. G.), the Minister for Agriculture (The Hon. Geo. Graham), the Lord Mayor of Melbourne (Lieut.-Colonel J. Burston), the Director of Agriculture (Dr. Cherry), Professor Spencer (Biology), Professor Elkington (History), Professor Osborne (Physiology), Professor Berry (Anatomy), the Chairman of the Board of Health (Dr. W. Perrin Norris), Professor Gilruth (Veterinary, Pathology), the President of the Veterinary Board of Victoria (Mr. S. S. Cameron, M. R. C. V. S.), Dr. J. W. Barrett, Mr. W. T. Kendall, M. R. C. V. S. (late Principal of the Melbourne Veterinary College), Sir Henry Weedon, the Hon. George Swinburne and the Hon. J. E. Mackey.

The Loyal Toast having been honored, Dr. J. W. Barrett proposed the toast of the founders of the Melbourne University Veterinary School. He said that a few years ago the university did not cater for properly training the men who would have to conduct the industries of the country. During the past seven years, however, they had established Schools of Agriculture, Education, Mining and Engineering and had made proper provision for the training of dentists and chemists. The last, and in some respects the greatest step, was the establishment of a School of Veterinary Medicine in connection with the University. The late government took the initiative and the present government loyally accepted their predecessors' bill, with the result that the measure had become law and the Veterinary School an established fact. Thanks were due to Mr. Swinburne, Mr. Mackey, Sir Thomas Bent, and the present ministry for their cordial assistance and also the city council for so promptly granting four acres of valuable land, right in the heart of the city

and adjoining the University grounds as a site for the Veterinary School buildings and Research Laboratory.

Professor Baldwin Spencer in supporting the toast, said he must confess that universities had, up to recent times, been rather the home of conservatism. He thought that in Melbourne that stage had now been passed and the one aim was to make the University the seat of every kind of learning that would be of assistance to the public and the nation. A School of Agriculture two years ago and now one of Veterinary Science were perhaps the most useful developments in recent times, and we had to thank the members, not only of this government, but of the previous government also for the keen interest they had shown in these matters. It was to the very kind feeling of the city council, together with the generous support shown by the Minister for Agriculture that we had had handed over to us a site for this Veterinary School.

The Hon. Geo. Graham, Minister for Agriculture, in responding, said that he had done but a small part in bringing the Veterinary School into existence. It was true that, with the help of a sympathetic house he had managed to get the bill passed through parliament, but in this case the whole of the credit was due to Mr. Swinburne, Sir Thomas Bent and Mr. Mackey. He was satisfied that but for these gentlemen there would have been no Veterinary School to-day. We should not forget what our old friend, Mr. Kendall, had done for the school. He established a Veterinary College in Melbourne and many of his students were now filling very important positions in this and other countries. He did not know how Mr. Swinburne had secured the services of Mr. Gilruth as Professor and Dean of the Veterinary Faculty, but was satisfied that we had the right man in the right place. Sir Henry Weedon had taken an active part in negotiating for the gift of four acres of land in close proximity to the University by the city council. The present government would be only too pleased to do all in its power to assist the faculty and Professor Gilruth in bringing the institution to a successful issue.

The Lord Mayor said that the city council and parliament were both very sympathetic in regard to the establishment of the Veterinary School. The proposal had received the support, not only of the city interests, but of the country as a whole. He was delighted to know of the recent development of the University of Melbourne for at this time of day it was more particularly on practical lines that the University should extend. The city

council was fully alive to the necessity of developing the meat trade, both home and export, and of securing a good and wholesome supply. In this and other respects the council was endeavoring to raise the standard of the food supply. For that end other reasons the founding of this Veterinary School in connection with the University was a step the citizens were never likely to repent of. The present occasion was a unique one in the annals of Australia, and in years to come when the Veterinary School had developed, it would be regarded as one of the historic events in the career of the Melbourne University. If there was found to be insufficient room in the four acres, and it was necessary to secure another paddock, no doubt the city council would be able to do something in the matter. With our large increase of trade and continuously expanding cattle markets, it was of very great interest and value to the State that we should have a body of men ready to take the lead in improving the meat supply and in showing both producers and retailers how they could place the trade on the best, most healthy and satisfactory condition.

Hon. Geo. Swinburne, in responding, said he wished to acknowledge the good work accomplished by Professors Berry and Osborne, Mr. S. S. Cameron and Mr. Kendall. He said they had been three years trying to get the school established. He referred to Mr. Kendall's efforts as being worthy of the very highest appreciation and was glad they had been able to secure the services of Professor Gilruth. He thanked Mr. Graham and the present ministry for endorsing the grant of £10,000 and the annual endowment of £4,000.

The Chancellor (Sir John Madden), in proposing the toast of Mr. Kendall, said he would ask them to drink the health of one whom he might well call the Father of Veterinary Science in Victoria. He had always known him as an admirable citizen and an honorable and worthy man. He would remind those present that he was the first to undertake the responsibility, with the attendant sneers and scoffs, drawbacks and discouragements, of establishing a Veterinary College in Victoria. He had started a private hospital in Melbourne and associated with it a Veterinary College. The result was that he had passed through his college 136 students, of whom 60 had gone out as well equipped and well-taught graduates. Finally he had now handed over to the University 24 students from his own college. The University was very glad, as also were his students and friends, that not

only did his college come over to the University and also his pupils, but because, in addition, he himself was to be the lecturer on Veterinary Medicine at the new Veterinary School. He felt sure that Professor Gilruth and Mr. Kendall would do credit to themselves and to the institution to which they had become attached. The Minister for Agriculture had said that someone had stolen Professor Gilruth from New Zealand, but it did not matter if you were found in the possession of stolen goods so long as you did not know they were stolen. It was not surprising that when universities were first established, they were nothing if not conservative. They were founded in anything but—favorable circumstances. It was owing to the tumult and disorder and bloodshed outside that people of philosophic, studious and peaceful dispositions gathered together in universities primarily that they might be able to follow their own bent without rude and forcible interruption. While they were developing their philosophies, they were in danger of being burnt at the stake for their adherence to philosophic principles. Therefore, universities in the beginning were very self-centered, conservative and precautions of what they did, and thanking God every day that they were able to do anything. In these modern times when universities are able to take the bit in their teeth, they can carry as far as who cares the practical applications of science and art. We all heartily and fully appreciate Mr. Kendall's services, and he had great pleasure in presenting him with an inscribed address. Mr. Kendall had never hesitated to walk in the path of duty and had resisted every temptation to be turned aside from it. We were all anxious to present a "Dreadnought" to the British Empire, but if we could spare Mr. Kendall, he knew of no better "Dreadnought" that we could present than he.

(Sir John Madden then presented Mr. Kendall with an address and a life-size portrait in oils of himself, subscribed for by members of the veterinary profession to be hung within the new University Veterinary Building.)

Mr. W. T. Kendall, in responding, said he wished to express his sincere thanks and his appreciation for the handsome manner in which his services had been recognized. He could conceive of no other way of so doing which would have gratified him more. He regretted to say that some of those gentlemen who had assisted him had gone to that bourne whence no traveler returns; others had gone to various parts of the world. He acknowledged the very great assistance given to him by Mr.

Cameron during a very critical period. He was with him at the time when they had to fight for everything they got. It was largely due to his efforts that they had the University Veterinary School established to-day. As far as Professor Gilruth was concerned, he said that Wellington was not more pleased to see Blucher than he was to welcome Professor Gilruth to the Chair of Veterinary Pathology. We had now one of the best institutions in the world and the government would never regret having set aside the necessary money for the establishment and development of the University Veterinary School.

Sir Henry Wrixon (Vice-Chancellor of the University) proposed the health of the incumbent of the Chair of Veterinary Pathology and Dean of the Faculty of Veterinary Science in the Melbourne University (Professor Gilruth). He said Professor Gilruth did not come to us as a stranger. He brought to us a career which was well known all over the world. He had made a name in Europe, and we all know how he was prized in New Zealand. We would gladly welcome him here as a man wanted at this particularly hour. We had in him a man who united a thorough knowledge of the science he taught with a knowledge of the man to whom he taught it. There was a deep feeling in many of the people that we ought to utilize all our science and teaching and intelligence in order that it might be made easier for every man to do the developmental work of this country with better prospects for himself. We could not have a better man to further this end than Professor Gilruth. (The toast was cordially honored.)

Professor Gilruth, in responding to the toast of his health, said that one of the chief reasons that decided him to take up the onerous duties to which he was called by the University of Melbourne and the government of Victoria, was that this work opened up a great field for research and investigational work. He had been much impressed since his arrival with the enthusiasm shown with regard to this movement. He had never in his life been associated with a proposal to which so many people devoted their enthusiastic and energetic support without—so far as he was aware—a single individual having an axe to grind. In this respect the inauguration of the Melbourne University Veterinary School was almost unique. The late and the present governments had acted with the utmost courtesy and consideration, and had enthusiastically supported the whole scheme. The University authorities, although it had been clearly stipulated



that no money voted to the Veterinary School could be converted into other University channels, had done all in their power to assist.

Then again the city council came forward with a gift of land valued at about £20,000 and handed it over to a University over which they had no control. The public had also shown their appreciation in a practical manner.

A scholarship of £100 had been donated by Sir Richard Cooper, a resident of England, and another one had been established by Mr. Payne of this city. Gold and silver medals have been donated by the Hon. Geo. Graham, the Hon. Geo. Swinburne and others, and he was glad to see that substantial encouragement had been offered for the carrying out of Veterinary Research work. He was pleased to be associated with Mr. Kendall, and trusted that the establishment of the Veterinary School would be fraught with great benefit to the whole of the community. He felt justly proud to have had the position of Director of the new school and laboratory conferred upon him, and it would be his utmost endeavor to make the institution a pronounced success. (The toast of "The Chancellor" brought the evening to a close.)

NINTH INTERNATIONAL VETERINARY CONGRESS AT THE HAGUE, September 13-19, 1909.—The Executive Committee kindly begs you to insert the following information in your periodical:

The preparation of the congress is in full swing, and more than eight hundred participants from all parts of the world have had themselves inscribed as members, whilst many official delegates have been appointed.

Out of more than 140 persons who promised to give reports about the subjects, previously mentioned, over 100 have proved true to their word. A few of the other reporters have obtained, for well-founded reasons, prolongation of the term of sending in their reports. The others are regarded as having foregone their wish of reporting upon some subject, now that the term of sending in their papers has expired.

The committee has already begun to dispatch the printed reports, to those who have had themselves inscribed as members, so that the members have already received a number of these reports.

The committee will endeavor to have the reports that came too late printed before the date of the congress. It will, how-

ever, be impossible to have the summaries translated likewise in all those cases.

The meetings of the congress, as well as the opening and closing sessions will be held at Scheveningen in the rooms of the Kurhaus and of the hotels of the "Exploitatie-Maatschappij Scheveningen." These rooms were already appointed for the purpose.

The Executive Committee has likewise arranged a plan for the festivities and ceremonies connected with the congress. The gala-banquet will take place on Thursday, the 16th of September, in the great concert hall of the Kurhaus. On Friday, the 17th of September, a gala-performance will be given in the Royal Theatre at The Hague. Further particulars will be communicated in the official program which will be published in a short time.

As concerns the excursions in the afternoon of Wednesday, the 15th of September, the celebrated harbors of Rotterdam will be visited, and after the expiration of the congress, consequently after the 18th of September the great excursions will begin. In the first place a visit will be paid to the town of Utrecht and its beautiful environs.

On Monday, the 20th of September, the inauguration of the monument in honor of the late Dr. Thomassen, who died in 1906, will take place at the Veterinary School of the State in Utrecht. Thereupon the excursionists will go to the Northern provinces of the Netherlands, where the most remarkable towns and districts will be visited, and in some places cattle and horse shows will be organized for the members of the congress. For those who wish to see another part of Holland, excursions to the province of Zeeland are planned. A preliminary program of the excursions will soon be sent to the members.

A committee of ladies has been formed, whilst a plan for occupying the ladies of the members in a pleasant manner during the sessions of the congress has been prepared.

All particulars concerning the congress will be communicated in a detailed circular which will be sent, in due time, to all the members, and which will likewise contain detailed descriptions of the towns and districts that are to be visited by the excursionists.

In the name of the Executive Committee:

D. A. de Jong, General Secretary,  
Maresingel 20, Leyden (Holland).

Leyden, 1st July, 1909.

# BUNTIN DRUG CO.'S SOLUBLE HYPODERMIC TABLETS.

## VETERINARY.

| No. |                                                                            |            | Per tube of<br>10 tablets. |
|-----|----------------------------------------------------------------------------|------------|----------------------------|
| 114 | Aconitine, Crystals.....                                                   | 1-40 gr.   | \$0 12                     |
| 115 | Aconitine, Crystals.....                                                   | 1-30 gr.   | 13                         |
| 100 | Aconitine, Crystals.....                                                   | 1-20 gr.   | 15                         |
| 116 | Aconitine, Crystals.....                                                   | 1-10 gr.   | 17                         |
| 117 | Aconitine, Crystals.....                                                   | 1- 6 gr.   | 22                         |
| 118 | Aconitine, Crystals.....                                                   | 1- 4 gr.   | 27                         |
| 161 | Arecoline, Hydrobrom—Declined.....                                         | 1/4 gr.    | 50                         |
| 159 | Arecoline, Hydrobrom—Declined.....                                         | 1/2 gr.    | 80                         |
| 160 | Arecoline, Hydrobrom—Declined.....                                         | 1 gr.      | 150                        |
| 101 | Atropine Sulphate.....                                                     | 1- 4 gr.   | —                          |
| 131 | Atropine Sulphate.....                                                     | 1- 2 gr.   | 15                         |
| 119 | Atropine Sulphate.....                                                     | 1 gr.      | 30                         |
| 158 | Barium Chloride Comp (Ellis).....                                          | —          | 15                         |
|     | { Barium Chlor.....                                                        | 7 grs.     |                            |
|     | { Digitaline.....                                                          | 1-12 gr.   |                            |
| 152 | Cardiac Tonic.....                                                         | —          | 20                         |
|     | { Digitaline, Pure.....                                                    | 1-10 gr.   |                            |
|     | { Sparteine Sulph.....                                                     | 1- 5 gr.   |                            |
|     | { Strychnine, Nitrate.....                                                 | 1- 8 gr.   |                            |
| 102 | Cocaine Muriate.....                                                       | 1 gr.      | 30                         |
| 124 | Cocaine Muriate.....                                                       | 1-1/2 grs. | 40                         |
| 125 | Cocaine Muriate.....                                                       | 2 grs.     | 45                         |
| 120 | Cocaine, 4/5 grs. for Veterinary Anesthesia.....                           | —          | 95                         |
|     | (One tablet dissolved in 1 drachm of water makes an 8-per cent. solution.) | —          |                            |
| 103 | Colchicine.....                                                            | 1- 4 gr.   | 70                         |
| 126 | Colchicine.....                                                            | 1- 2 gr.   | 20                         |
| 127 | Colic (Knowles).....                                                       | —          | 50                         |
|     | { Morphine Sulph.....                                                      | 2 grs.     |                            |
|     | { Atropine Sulph.....                                                      | 1- 4 gr.   |                            |
|     | { Aconite Cryst.....                                                       | 1-20 gr.   |                            |
| 104 | Coniline Hydrobromate.....                                                 | 1- 2 gr.   | 43                         |
| 128 | Coniline Hydrobromate.....                                                 | 1 gr.      | 60                         |
| 105 | Digitaline, Pure.....                                                      | 1- 8 gr.   | 12                         |
| 129 | Digitaline, Pure.....                                                      | 1- 4 gr.   | 20                         |
| 156 | Ergotine.....                                                              | 2 grs.     | 18                         |
| 157 | Ergotine.....                                                              | 4 grs.     | 27                         |
| 113 | Eserine Salicylate.....                                                    | 1- 4 gr.   | 50                         |
| 133 | Eserine Salicylate.....                                                    | 1- 2 gr.   | 75                         |
| 134 | Eserine Salicylate.....                                                    | 1 gr.      | 125                        |
| 135 | Eserine Salicylate.....                                                    | 1 1/2 grs. | 190                        |
| 106 | Eserine Compound.....                                                      | —          | 100                        |
|     | { Eserine Salicylate.....                                                  | 1- 4 gr.   |                            |
|     | { Pilocarpine Muriate.....                                                 | 1- 2 gr.   |                            |
|     | { Strychnine.....                                                          | 1- 8 gr.   |                            |
| 153 | Eserine and Pilocarpine.....                                               | —          | 25                         |
|     | { Eserine.....                                                             | 1- 2 gr.   |                            |
|     | { Pilocarpine.....                                                         | 1 gr.      |                            |
| 154 | Colic (Forbes).....                                                        | —          | 20                         |
|     | { Eserine Salicylate.....                                                  | 1 gr.      |                            |
|     | { Pilocarpine Mur.....                                                     | 3 1/2 grs. |                            |
| 107 | Hyoscyamine Sulphate, Crystals.....                                        | 1- 8 gr.   | 75                         |
| 146 | Hyoscyamine Sulphate, Crystals.....                                        | 1- 4 gr.   | 30                         |
| 108 | Morphine Sulphate.....                                                     | 1 gr.      | 20                         |
| 136 | Morphine Sulphate.....                                                     | 1 1/2 grs. | 30                         |
| 137 | Morphine Sulphate.....                                                     | 2 gr.      | 35                         |
| 138 | Morphine Sulphate.....                                                     | 2 1/2 grs. | 45                         |
| 155 | Morphine Sulphate.....                                                     | 3 grs.     | 50                         |
| 109 | Morphine and Atropine.....                                                 | —          | 45                         |
|     | { Morphine Sulph.....                                                      | 1 1/2 grs. |                            |
|     | { Atropine Sulph.....                                                      | 1/2 gr.    |                            |
| 139 | Morphine and Atropine.....                                                 | —          | 45                         |
|     | { Morphine Sulph.....                                                      | 1 1/2 grs. |                            |
|     | { Atropine Sulph.....                                                      | 1/4 gr.    |                            |
| 140 | Morphine and Atropine.....                                                 | —          | 50                         |
|     | { Morphine Sulph.....                                                      | 2 grs.     |                            |
|     | { Atropine Sulph.....                                                      | 1-4 gr.    |                            |
| 141 | Morphine and Atropine.....                                                 | —          | 60                         |
|     | { Morphine Sulph.....                                                      | 2 1/2 grs. |                            |
|     | { Atropine Sulph.....                                                      | 1-4 gr.    |                            |
| 142 | Nitroglycerine.....                                                        | 1-10 gr.   | 12                         |
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| 111 | Sodium Arsenite.....                                                       | 1 gr.      | 12                         |
| 112 | Strychnine Sulphate.....                                                   | 1-4 gr.    | 10                         |
| 147 | Strychnine Sulphate.....                                                   | 1-2 gr.    | 11                         |
| 148 | Strychnine Sulphate.....                                                   | 1 gr.      | 12                         |
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| 150 | Veratrine Muriate.....                                                     | 1-2 gr.    | 12                         |

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# AMERICAN VETERINARY REVIEW.

SEPTEMBER, 1909.

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## EDITORIAL.

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### EUROPEAN CHRONICLES.

PARIS, July 15, 1909.

PRACTICAL EDUCATION OF VETERINARIANS.—This important question is one which implies difficulties of realization met in both medicines. But in veterinary, there is a general apprehension that to-day, while professional teaching is as complete as it can be to the scientific point of view, by opposition the practical side of the question is insufficient, on some points at least. It is on that account that it may be interesting to make a concise examination of the manner with which the subject has been treated in the *Berlin Th. Wochen.*, by the learned rector of the high school of veterinary medicine of Berlin, Prof. Schmaltz, and which I find resumed in the *Annales of Bruxelles*.

The suggestions of Rector Schmaltz are certainly deserving of the close attention of the trustees, directors, administrators, etc., of our old and recently organized veterinary schools in America. Our eminent colleague begun by examining the defectuous situation of the practical education of veterinary students and indicates afterwards the remedies that are applied so far. But for him, none of those are answering the exigencies, greater and greater, that to-day the practice of veterinary medicine demands in country districts, where general instruction is much higher than it used to be.

Placing himself to the point of view of the German schools, Rector Schmaltz considers the various methods which might be

applied to reach the best results with a relative minimum in the sacrifices made in pecuniary and time expenses, for the duration of veterinary studies.

There are three principal methods now in presence: 1st, improvement of the practical teaching in the school itself; 2d, a stage of one year with a practitioner after the obtention of the diploma of veterinarian; 3d, during the studies, a semester exclusively reserved to practical instruction in a given place, in the country.

This last is the plan of Rector Schmaltz.

We will follow him in his considerations of the three methods.

\* \* \*

THE PRACTICAL TEACHING IN THE SCHOOLS includes local and external clinics and exercises of obstetrics.

This organization may be sufficient for schools having a small number of students and when they are situated in agricultural centers, but they do not answer for large schools, as for them the external clinics are always very limited on account of being some distance from the country. And again, outside visits mean too much loss of time for the amount of benefit realized, besides the fact that only few students can take advantage of the opportunities offered. Obstetrics gains nothing either, as it would be difficult to call and bring students by night to cases of parturition.

These are the reasons why Prof. Schmaltz does not believe that the improvements already existing in some schools in that special direction can ever bring a sufficient result.

The second method is the STAGE OF ONE YEAR WITH A PRACTITIONER. This seems at first as the ideal principle. It is an error. If it is used in some cases it is because there is nothing better at hand. A first difficulty is: who shall be the practitioner? He cannot be a veterinarian of the administration, as those have already assistants who they pay very little; and besides they would not be willing to run the chances of a future

severe competition that afterwards one private veterinarian might do them. It must also be remembered that young graduates are not looking for improvement in the service of the administration, but principally in that of practical veterinary medicine, in the medical art proper.

To settle the difficulty it would be better to let the obligatory duration of the stage be fixed by the student himself; and have him select his own practitioner. Evidently then students would select those with whom they would likely learn something. And yet, with all that, as the young assistant would be at the order of his practitioner, most of his time shall belong to him and of course his opportunities for his personal instruction will be limited or would vary according to the circumstances.

The method proposed by Prof. Schmaltz is to impose on the students before the final examination, one extra semester of studies, which shall be strictly practical, and when he will be taught and shown veterinary medicine such as it is met and practiced in the ordinary run of country life.

To realize this idea, the author demands that at every veterinary school there shall be annexed a farm, where students will pass the last or one of the last of the semesters of his studies, to complete its practical instruction under the direction of an "EXTERNAL PROFESSOR."

The advantages resulting from this would be an addition to the medical studies in relation to the practical part of it, an improved knowledge of the exploitation of animals in agricultural centres, and an initiation, *in loco* to country life, to the needs and interests of agriculture. Everyone agrees in saying, that instruction in schools ought to be complete to the practical point of view, but the practical knowledge of the pathology of ruminants and swine, as well as that of obstetrics, can only be obtained by a long stay in the country and not by intermittent and often hasty visits. A continued observation of domestic animals and a daily contact with agricultural people are essential. And not only will the student improve his stock of practical veteri-

nary knowledge in relation to medicine, but he will also in that of zootechny and agronomy.

The student ought to remain on the farm a whole semester. The one preceding his final examination would be the best. The duration of the studies would be extended one semester, but essentially for that practical improvement.

The professor at that farm should be one who, besides extensive scientific knowledge, should also have a well-confirmed practical experience and not less than ten years of practice. The clinical material would be provided not only from the animals of the farm, but also from the surrounding country.

As it is seen, the program of Prof. Schmaltz is a daring one, and above all, one which deserves serious attention. It is already partially existing in some places but it has not yet reached the extensive view entertained by the professor. Will it ever be realized?

If I am not greatly mistaken the existence of the experimental stations which exist in some parts of the United States, and which for some are or might easily be attached to veterinary institutions, could well be made a step in the direction of the realization of Prof. Schmaltz's method. They might readily fill the part of the farm he calls for, and at least serve as an experiment to test the value that would follow for those who would go there. But I am much afraid that an additional stage would rather be unwelcome to students.

\* \* \*

SPECIFIC CHEMICAL THERAPEUTY OF TRYPANOSOMIASIS AND SPIRILLOSIS.—In the *Archives of Internal Medicine*, Prof. Terry, of Rockefeller Institute of New York, has in a general review considered the various treatments which have been tested in these two groups of infections which have become closely related in the researches of parasitology and therapeutics of the last few years. This review of Prof. Terry, is interesting from the practical point of view, as patients affected with such diseases may fall in the way of the practitioner.

TRYPANOSOMIASIS is the generic term applied to designate the infections caused by the various trypanosomas: *T. GAMBIENSIS* of the sleeping sickness; *T. BRUCEI* of Nagana; *T. EVANSI* of the Surra; *T. EQUINUM* of the disease of Cadaras; *T. EQUIPERDUUM* of dourine, etc., etc.

Until 1904 arsenic was the only drug used against trypanosomiasis. But since the works of Ehrlich and Shiga, other products have been employed, which can be arranged into four groups; the colors of benzidine the basic colors of triphenylmethane, the compounds of arsenic and the compounds of antimony.

Among the succedanea of benzine, the most used has been the trpan-red or trypancot, so named on account of its active action upon trypanosomas and its red color.

Of the basic colors of triphenylmethane, the malachite green, the brilliant green and the parafuchsine have been experimented with by Ehrlich, who concluded that the last, the parafuchsine, was the most active but that its curative action remained very weak.

Among the recent compounds of arsenic, atoxyl is the most valuable. Its action made known by Koch has been sufficiently recorded. The important point is that the treatment must be kept up for a long time. Injections of 50 centigrams repeated two days in succession with ten days suspension between each double injection. In light trypanosomiasis, the parasite disappears rapidly from the blood and lymphatics. In severe cases the results are not as good.

Two other preparations have been recommended by Ehrlich, as substitute of atoxyl, the ACETYL-ATOXYL and the PARAXY-HENZYLIDE-ATOXYL, which, richer in arsenic than atoxyl, is ten times less toxic.

Among the compounds of antimony, the most active is the double tartrate of sodæ and antimony, which, injected by Plimmer and Thompson with rats infected with surra and nagana, found that the trypanosomes had disappeared from the blood between half an hour and two hours. In France, tartar emetic

has also been used. An interesting point to notice in these researches upon the therapeutics of trypanosomiasis is that the parasite can acquire a marked resistance to the drugs in use. This resistance varies according to the species and Ehrlich divides them into resisting, and weak or susceptible. A single passage through rabbits is sufficient to transform a resisting into a weak trypanosome. These conditions of tenacity or of weakness have no connection with the virulency.

Like trypanosomiasis, SPIRILLOSIS have been submitted to new and various drugs. But differently from the trypanosomiasis, which form an homogeneous group, spirillosis include affections caused by parasites rather different; spirillus, spirochetes, and treponemas and which are related to each other only by morphological and biological analogies.

SPIRILLOSIS of birds, caused by the SPIRILLUM GALLINORUM has been the object of investigations by Uhlenhuth, who considers atoxyl as the best treatment. African fever caused by the SPIRILLUM DUTTONI has been studied experimentally by Vassel, who has obtained good results with trypancot.

European recurrent fever caused by SPIRILLUM OBERMEIER has also been treated by atoxyl.

\* \* \*

TREATMENT OF SERO-FIBRINOUS PLEURISY.—Autoserotherapy has been the subject of a communication of the *Presse Medicale* of which I find allusions in some of our professional journals. The question relates at present, as a means of treatment of sero-fibrinous pleurisy.

Imagined and described by Gilbert, in human medicine, autoserotherapy consists in the subcutaneous injection, in a sick individual, of a few cubic centimeters of its pleuritic effusion, which will promote a more rapid absorption of the effusion in the chest.

This method has given good results with some physicians; and perhaps veterinarians could take advantage of it. The method is simple. With the ordinary attention and on the classi-

ical spot, an exploring needle of Pravaz is introduced in the chest and filled. Without removing it entirely, it is carefully introduced under the skin and the contents are injected. The operation is repeated every two days and may be renewed several times, according to cases.

Autoserotherapy stimulates the resorption of acute pleuritic effusion. It has a much more important and more regular action than the simple exploring puncture. Immediately after the first puncture, the quantity of urine secreted is suddenly much increased, as much as three times the amount and sometimes even more. The good effects obtained seemed to be due in great part to the mechanical action of the exploring puncture and specially to the antitoxic and bactericid products contained in the effusion and which are then thrown into the general circulation.

Schnutgen, of Berlin, confirmed its value by a statistic of twenty successes. In man fourteen good results are said to have been realized in fifteen cases of sero-fibrinous pleurisy. It has no influence in hemorrhagic pleurisy, in those with suppurative tendency or in hydrothorax.

The method is so simple that veterinarians might do well in resorting to it. An army veterinarian, Mr. Magnin, has already published one case where he has used it. The subject was treated by auto-serotherapy five and ten grammes of effusion being injected on the neck and he received besides subcutaneous injections of caffeined artificial serum; but notwithstanding died.

Of course, this single case is insufficient to decide as to the value of the method when applied to animals, but others will tell more about it.

Mr. Magnin, however, has obtained valuable information from this single case; viz.: that it is useful to perform the thoracentesis alternatively on one and then on the other side of the chest as the communication between both pleural sacs does not always exist and specially in sero-fibrinous pleurisy where abundant deposits of fibrin may exist.

OBSERVATIONS ON RABIES.—What a singular and ever-interesting disease rabies is! And how frequent are the various manifestations that one may meet with, where possibilities of error of diagnosis are present.

I have related in these pages many facts which have come to my knowledge, and here again I find in the *Revue Veterinaire*, observations which I must relate.

The first is the case of a cow which has a nervous affection, having some appearance of rabies. She is restless; all of a sudden she becomes nervous, excited by the slightest noise. She has muscular twitchings all over the body. Her eyes glaring and her looks anxious; they look full of fear. There is dorso-lumbar hyperthesia. Let loose, she starts in a run, turns over herself, her hind quarters are semi-paralyzed. Placed on observation the symptoms gradually subside and in a month she is about well.

The other observation is one of intermittent rabies in a cow. With her there can be no hesitation in the diagnosis. She has rabies with inco-ordination of motion, excitement at the sight of a dog, efforts to defecation, etc. By degrees, in a few days, she seems to improve, and she is returned to work which she performs very quietly. But suddenly after three weeks she has a second attack of rabies; perfectly similar to the first and from which she died in twenty hours. The diagnosis was confirmed by inoculation of the brain and of the bulb.

The third observation relates a case of three years incubation in a bovine. The diagnosis could not be doubted. The history, the number of cases of rabies connected with the case more or less directly, all prove it. With this animal, death did not occur until the 15th day after paralysis was manifested.

In a fourth observation, the intravenous antirabid vaccination for bovines offers practitioners an example of its value. The method was advocated by Prof. Galtier and consists in the intravenous injection of an emulsion made with the bulb of a rabid dog. The method has been largely experimented with and



has given good results; granting a lasting absolute immunity to herbivorous animals.

A last observation closes this interesting series. It is that of a spontaneous recovery from rabies. One of the dumb form of the disease. A dog had paraplegia, partial paralysis of the larynx, his tongue is hanging from the mouth and yet with all those symptoms he gradually recovered.

I may be in error but I think other cases of similar nature have already been observed. Personally I can recollect of one; but perhaps I had made an error in my diagnosis. In the case above, the history was strongly confirming the diagnosis made from the symptoms and on that account is well worthy being known and deserves to be recorded.

\* \* \*

DIAGNOSIS OF TUBERCULOSIS.—Always important, this subject has comparatively lately been occupying the attention of pathologists. And I fancy specially more in France, where scientists of that nationality have worked considerably on the various methods of the application and practical uses of the tuberculin test. Are we going to arrive at a final conclusion in relation as to which is the best test to resort to? I have already made known the opinion of some. I may to-day present the conclusions of a paper presented by Prof. Lignieres of Buenos Aires, where he advocates a new method which he calls that of the ASSOCIATED REACTIONS. Will they close the series?

CONCLUSIONS: 1st. Tuberculin thermic and local reactions are from the practical point of view the base of the diagnosis of tuberculosis:

2d. One must no longer depend on one reaction; it is absolutely necessary to resort to several of them, which may correct, control, complete each other and specially increase the chances of a positive diagnosis in tuberculous individuals; it is the method of the associated reactions.

3d. The selection in the methods to associate, depends on the conditions in which the operator will be; but in all cases, the

ophthalmo ought to be put to practice and be repeated, if possible. To the result of the thermic reaction by subcutaneous injection, that of the local subcutaneous reaction must always be added.

4th. The diagnosis of tuberculosis rests entirely in the apparition of a clearly positive reaction, whatever this may be. To the practical point of view, negative reactions are worthless against a single clearly positive one with the method of associated reactions. If several are positive, it is evident that the belief of the experimentator in his diagnosis is increased and consequently he will insist in the application of the sanitary measures.

5th. Doubtful reactions are very important; they impose the confinement of the animals that present them so as to submit them to new tests afterwards.

6th. For animals living in the fields or outside, all the year round, ophthalmo reaction is the best method of investigation; it may be repeated very often and allows each time the separation of sick and doubtfuls, with which other means of diagnosis can afterwards be applied.

7th. Local reactions which have no influence upon the thermic reaction, such as the cuti, the dermo and specially the ophthalmo, may be applied shortly before the subcutaneous injection, while local reactions which may have some effect on the general thermic reaction, such as the local subcutaneous and the intra dermo, ought never be resorted to if shortly after, one desires to obtain the result of a classical subcutaneous reaction.

8th. Often all local reactions give positive results in tuberculous subjects which receive at the same time a classical subcutaneous injection. Of those local reactions, the ophthalmo is the one that the subcutaneous injection affects the least and the intradermo the most.

9th. In general, one must wait a certain time before making a local reaction upon an animal which has recently received a classical subcutaneous injection. Three or four days after this

injection, the cuti, dermo and specially the ophthalmo may already be resorted to with success.

The local subcutaneous and the intra dermo are much more influenced by a previous injection of tuberculin; ten days and sometimes more are necessary to have elapsed if better conditions of success are looked for.

10th. One of the methods of associated reactions, among the simplest, most practical and most certain, consists in making at the same time, in the evening, say 8 o'clock, one ophthalmo, then at the base of the neck one dermo and on the same spot the subcutaneous injection of tuberculin. The next morning, 5 or 6 o'clock, the condition of the ocular reaction is taken, then the local subcutaneous and finally the thermic. It is much more difficult for a tuberculous subject to escape this test than with any others.

\* \* \*

BIBLIOGRAPHICAL NOTES: PROF. SCHMALTZ'S ANATOMY. —In March, 1901, page 946 of our 24th volume, it was my great pleasure to call the attention of American veterinarians to the first part, just issued then, of "ATLAS DER ANATOMIE DES PFERDES," by Dr. Reinhold Schmaltz, Professor of Anatomy at the Superior veterinary school of Berlin. To-day it is the second part, which I have the opportunity to consider.

This second part treats of the topographical *Myology* of equines. It is illustrated with the collaboration of Pro. Bruno Heroux, of Leipzig, and of Gustav Heuer, of Berlin, who made the drawings and wood engravings. The well-known house of Richard Schoetz, of Berlin, is publishing it and that is saying what efforts have been spent to make the book appear as it does.

Following the plan taken in the first part, this topographical myology contains no reading descriptive text, but in the thirty-nine plates that illustrate it, the reader finds the entire myology of the trunk and extremities. The plates are numbered as continuation of those that illustrate the first part. Hence in this it begins by plate 24 with the skeleton of the neck and trunk

with the two upper segments of the fore and hind extremities. (Plates 25 to 30 illustrate the superficial, middle and deep layers of the muscles of the trunk. Plate 31 illustrates one outside of the chest. The anterior extremity down to the digital region is occupying nine plates. In plates 41 and 42 there are views of the chest, inferior cervical region and intermaxillary space; 43 exposes the under part of the chest and of the abdomen; 44 the inguinal region; 45 the perineal of males and of females; 46 the diaphragm muscle, viewed by its posterior face; 47 and 48 show the loins and the pelvis; 49 the hypogastric region; 50 the interperineal; 51 the inside of the pelvic cavity and of the thigh. From the 52d to the 59th, included, are found various aspects of the different segments of the hind extremities, and the three last plates illustrate the foot in its external and internal various subdivisions.

I have said that there is no descriptive text in the book. First, there is no need for it, as to one who already knows his anatomy, glancing at the plates reads as well as any description. The plates are so true. But with that on each plate besides the duplicate on thin tissue paper which carries and completes the explanation of the typical plate, there is a legend attached to each illustration; kind of explanation and as the accumulation of parts and names might render the clear understanding difficult, the author has on those legends, arranged by numbers corresponding to others in the drawings, arteries, veins, nerves and lymphatics. For although this part of the atlas is principally topographical myology, one finds also in almost all the plates, blood vessels, and nerves, which make the book so thorough and complete that one cannot expect to find in the other parts of the work which will come after anything more complete than what is presented in plates 29 and 30, 47 and 48 and also in others.

The amount of work which had to be realized to arrive at the perfect completion of this atlas the number of minute and delicate dissections that had to be accomplished, the correctness with which the true nature has been represented, the fine work

of the artists, the drawings so natural of the muscles, the various coloration of the blood vessels, nerves, etc., etc., everything explain and plead favorably for the long length of time that has elapsed between the publication of those two parts, and we feel that this atlas of Prof. Schmaltz is to-day *the* only one of its kind and that it will remain for many years to come *the* only book which any veterinarian can consult to refresh his anatomical knowledge. As indeed a glance at any of the plates will permit either the advanced student ready for an examination, or again the practitioner on the verge of an operation, to review a dissected region just as well if not better, than if it was in the dissecting room and upon the best anatomical preparation.

The Atlas of Prof. Schmaltz is a valuable acquisition to veterinary literature. It is an international work which no doubt all veterinarians will be glad to get and which will necessarily urge the completion of the book and the publication of the two last parts at an early day.

\* \* \*

PURE MILK AND THE PUBLIC HEALTH, by Prof. Archibald Robinson Ward, B. S. A., D. V. M., is a new book recently issued by the house of Taylor and Carpenter, of Ithaca.

Graduated from the State veterinary college at Cornell University, the author has dedicated his work to Director V. A. Moore, his teacher.

This time it is from California that this little valuable addition to the science of Milk Hygiene is offered as an attempt to assemble together the essential facts for the information of the health officer and others directly concerned in the crusade for better milk. The great progress that has lately been made in every part of the globe in relation to the milk question has given rise to immense improvements; and yet everywhere those who are interested in it are anxious to know what others are doing in solving the subject of the milk control; that is of milk and dairy inspection.

"PURE MILK" contains nearly 200 pages of an appendix. There are seventeen illustrations. The subjects are divided into eleven chapters: Contamination of the milk, Changes caused by bacteria, Epidemic diseases transmitted by milk, Bovine tuberculosis and other cattle diseases, Municipal sanitary control of milk, Pasteurization, Microscopic tests, Bacteriological examination, Certified milk, Analysis and Adulterations.

This presentation of the contents tells how much interesting material can be found in the book of Doctor Ward, and while some will recognize in it, parts which have been found somewhere else, it must be remembered that it has been the principal object of the author to only make an attempt to gather the most essential facts already known.

The appendix contains Ordinances in California, in Chicago, in Duluth, etc., etc.

The book is neatly gotten up, the illustrations are good and the reading quite easy and interesting.

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BIBLIOGRAPHIC ACKNOWLEDGMENTS.—Bulletin No. 113 of the Agricultural Experimental Station of the University of Minnesota, Veterinary Division, containing an article on Hog cholera and Vaccine by Dr. M. H. Reynolds. The Quarterly Bulletin of the Chicago Veterinary College, Vol. 7, No. 1. Circular 148 from the Bureau of Animal Industry, a practical demonstration of a method for controlling the cattle tick, by W. D. Hunter and J. D. Mitchell. The Louisiana Bulletin 115 with the principles and practice of feeding, including our available stock foods, by Dr. W. H. Dalrymple. The second annual report of State Veterinarian of Alabama, Dr. C. A. Cary. Veterinary Notes from Parke, Davies & Co. "Examiner" of Launceston (Australia), with articles from E. A. Weston, G. M. V.C.

A. L.

## PROF. LIAUTARD GREATLY HONORED.

### Ministère des affaires étrangères.

Par décret du Président de la République en date du 4 août 1909, rendu sur la proposition du ministre des affaires étrangères, et vu la déclaration du conseil de l'ordre de la Légion d'honneur du 31 juillet 1909, portant que la nomination comprise dans le présent décret est faite en conformité des lois, décrets et règlements en vigueur, est nommé chevalier dans l'ordre national de la Légion d'honneur, M. Liautard (Alexandre-François-Augustin), médecin vétérinaire à New York, directeur de l' " American Veterinary Collège ": services distingués rendus à l'influence et aux intérêts français en Amérique depuis 34 ans.—From the *Journal Officiel de la République France* (organ of the Government), August 6, 1909.

The above clipping from the official journal of the Republic of France will convey to the friends of Dr. Liautard who read French, the very great honor of which he has recently been the recipient. The doctor's modesty would not permit him to write an account of it for his many friends in America, so we have undertaken to extract the information for those who do not read French, which is about as follows:

By a decree of the President of the Republic of August 4, 1909, rendered on the proposition of the Minister of Foreign Affairs, and the consul of the Order of the Legion of Honor, Prof. Liautard was named chevalier in the National Order of the Legion of Honor in recognition of his distinction as a veterinarian and his distinguished services as director of the American Veterinary College and his good influence in the interests of France in America for thirty-four years. We understand that to be a chevalier of the National Order of the Legion of Honor is a rare distinction in France, and the recipient of it is paid a high tribute by his countrymen, and we voice the sentiment of the entire veterinary profession in America when we congratulate Dr. Liautard.

## INDEMNITY FOR GLANDERED HORSES.

By an act of the legislature passed in May last, the state of New York, after October 1, 1909, will pay an indemnity of 80 per cent. of the appraised value on glandered horses reported and destroyed, in which glanders was not manifest by clinical symptoms, and 50 per cent. of the appraised value on those in which the disease is manifest clinically. In no case shall the appraisal of a horse exceed one hundred and twenty dollars. While the amount paid by the state is not a large sum, it will be a material assistance in the majority of instances in replacing the animals destroyed, and will be a stimulus toward the prompt reporting of cases by owners who might otherwise, for mercenary reasons, endeavor to get rid of them for a small amount, thereby disseminating the disease by starting new centers of infection. The same law applies similarly to tuberculosis in cattle; the maximum appraisal value in that case being seventy-five dollars, and the different percentages being determined by the existence of the disease in a localized or generalized form, the former getting 80 per cent. and the latter 50 per cent.

The fact that glanders is so prevalent, (in the larger cities of the state particularly) is evidence of the necessity of this measure. Veterinarians throughout the state are being furnished blank forms for convenience in reporting infectious or communicable diseases, upon which, when they are confronted with a case of glanders for instance, they immediately enter a record of it, giving the name and address of the person in charge of the horse and the name and address of the owner, if it be different, (as in the case of a horse at a boarding stable) and any other information they may desire to convey, and mail it at once to the Veterinary Bureau of the Department of Agriculture at Albany; which bureau, will immediately detail a department veterinarian in the locality from which the report came, to take charge of the matter. This will relieve the local veterinarian of all responsibility, and place his client in a position to benefit by the provisions of the state; and therefore merits the hearty co-operation



of the practitioner. In New York City, where glanders has been rife for several years, there are three resident veterinarians from the Department of Agriculture. The amount of compensation to owners will be determined by the stage of the disease, as revealed by post-mortem examinations. The mutual advantage accruing from this law to the state, the practitioner and his client, is apparent; and we predict an appreciable decrease in glanders, as well as other contagious diseases in the Empire state by October 1, 1910.

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EDITORIAL COMMENT.—We have been favored with some advance pages of the second edition of "The Production and Handling of Clean Milk, including Practical Milk Inspection," by Kenelm Winslow, M. D., M. D. V., B. A. S., and "Essentials of Milk Bacteriology," by H. W. Hill, M. D., from the publishers, the Wm. R. Jenkins Co., New York; which we have perused with much pleasure, both in the reading of them and in the anticipation of the excellent practical guide to the production, handling and distribution of clean milk that will soon be within the reach of veterinarians and scientific dairymen. At this time, when the attention of veterinarians, scientists and dairymen are being directed toward the importance of cleanliness in the production of milk, and the devastation and infant mortality as a result of dirty milk, this book will be most welcome. It contains chapters on "Germs in Their General Relation to Milk," "Composition of Milk and Cream and Their Products," "Milk Products," "Feeding for Milk," "Housing and Good Care of Cows," "Handling of Milk and Cream," "Cost of Producing and Handling Milk," "Some Hints Concerning Milk Distribution," "Milk Inspection," "Essentials of Milk Bacteriology" and an Appendix, giving detailed descriptions and plans for barns, milk houses and city dairies, a description of the milking machine, and much other useful knowledge concerning dairy matters.

This book has 367 pages and 101 illustrations, including one colored and sixteen full-page plates, and is one of the most valuable additions in the form of general information on the production of milk, embracing the whole subject of feeding, housing and caring for the cows, as well as the care of the milk that has yet been produced. It can be read and understood by dairymen, agricultural and veterinary students, practitioners, teachers and bacteriologists, as it embraces all phases of the subject.

**HORSE ACCIDENTALLY SELF SHOT.**—A saddle horse ridden by its owner, W. Jackson, of Butte, Mont., stepped upon a ball cartridge as he was jogging down Main street, exploding it. The bullet passed through the horse's body, emerging close to Jackson's leg. The animal almost bled to death before a veterinary surgeon could be found to stop the flow.—*New York World*, Sunday, July 25, 1909.

J. P. CLEARY, a farmer near Palouse, Wash., owns a seven-year-old Jersey cow which has made a remarkable record, giving birth to five calves in less than two years. In June, 1907, she gave birth to twin calves. The following June she bore another calf and recently when Mr. Cleary went to his barn he found her mooing over two more calves. Four of the calves are heifers, and all have lived. The cow is valuable for the abundance of rich milk she gives.—*Horn and Hoof*, July, 1909.

**COMMENDS NEW JERSEY LIVE STOCK COMMISSION FOR IMPORTING PERCHERONS AND CLYDESDALES.**—Referring to the interesting question as to whether trotting bred horses or draughters are best suited for the farmers of the East to raise and use, a Western horseman of national prominence, who has been identified with draught horse breeding ever since the Percherons and Clydesdales were introduced in the Mississippi Valley writes to the *Herald* in unqualified commendation of the action of the Live Stock Commission of New Jersey in importing such stallions for stud service in that State. Expressing the opinion that the soil of the Atlantic States is better adapted than that of the prairies to the production of draughters and that no other branch of animal husbandry will yield better profits to the Eastern breeder \* \* \*—*New York Herald*, Sunday, July 25, 1909.

## ORIGINAL ARTICLES.

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### THE ERADICATION OF CATTLE TICKS IN THE SOUTH.

By W. P. ELLENBERGER, NASHVILLE, TENN.

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While the veterinarians of the South have probably all had the opportunity of seeing cases of Texas fever and have taken more or less interest in the matter of tick eradication, those of the North have not likely given this subject much attention, nor have many of them had the opportunity of seeing cases of the disease. This article is therefore made to cover the subject in a general way rather than to specialize on some one phase of it.

On account of the great extent to which the Southern cattle ticks (*Margaropus annulatus*) interfere with the cattle industry of our country, and the immense annual loss caused by them, their eradication must be looked upon as a national affair rather than simply as a local matter.

Tick eradication is of much importance to our country as a whole, as it is absolutely necessary to the welfare of the cattle industry, and indirectly to the advancement of agriculture in the infested district. Investigations and experiments have demonstrated the practicability and advisability of eradicating this pest, and the officers of the tick-infested states, who have charge of the agricultural and live stock matters, have urged tick eradication for several years.

To accomplish the eradication of this pest the local authorities of the tick-infested district need the co-operation of the Federal Government both in the matter of furnishing experienced men and funds, as the local authorities have not the necessary organization and it is not likely that the state legislatures will appropriate sufficient funds to successfully conduct the work without such government aid. The matter was therefore taken up by the state authorities of the quarantined district and Con-

gress was petitioned to appropriate funds to be used by the Secretary of Agriculture through the organization of the Bureau of Animal Industry in co-operation with the local authorities in the infected district in the eradication of ticks.

**LOSSES CAUSED BY THE CATTLE TICK.**—The importance of eradicating the cattle ticks is at once apparent when the losses caused by them are taken into consideration. The whole economic condition of the South is affected. The principal losses are briefly mentioned as follows:

Losses caused by death from Texas fever of susceptible cattle within the quarantine district, and from the occasional accidental outbreak of the disease above the quarantine line.

Losses resulting from the lower price paid on the Northern markets for all cattle from the quarantined district on account of the restrictions placed on them, and this reverts in practically setting the price of such cattle within the quarantined district.

Losses due to the cattle tick as an external parasite causing impoverishment of the blood, and irritation, resulting in the stunted condition of tick infested cattle. The beef production of the infected district is consequently greatly reduced both in quantity and in quality.

Losses due to the large decrease in milk production of tick-infested Southern dairy cows.

Losses sustained by Southern breeders of pure bred cattle. Such cattle being generally susceptible to Texas fever many die from the disease. Sales are restricted to local markets where there is not much demand for such susceptible cattle. Exhibitions are excellent advertisements, but the breeder of cattle in the infected district is barred from showing his cattle outside of the quarantined district on account of the quarantine restrictions, and he is practically barred from showing them at fairs within the quarantined district on account of the danger of exposure to infection.

Losses due to the expenses incurred each year by both the government and the various infected states in establishing quar-

antine lines and in enforcing the necessary regulations to prevent the spread of Texas fever.

Losses due to increased freight rates on account of the necessary cleaning and disinfection of cars, and stock pens, and maintaining separate yards for Southern cattle.

These appalling losses, estimated at from \$60,000,000. to \$100,000,000 annually, can be entirely prevented by the eradication of ticks. This can be accomplished at a small proportionate cost, and every dollar expended be returned many fold during each succeeding year.

**BENEFITS FROM TICK ERADICATION.**—It is hardly possible to estimate the immense benefits that may reasonably be expected to accrue from the accomplishment of tick eradication.

Besides entirely effacing the actual losses, the most important of which have been mentioned, it would also prevent the potential losses, which may be considered as the difference between the cattle industry and the agricultural conditions of the infected territory to-day and the extent to which they would no doubt develop with the pest exterminated.

Following the eradication of ticks there will no doubt soon be a very large increase in the number and grade of cattle in the territory now quarantined. At present there is but little inducement for the establishment of pure bred herds in the infected district, but with the dangers of infection removed, and unrestricted markets obtained, there should be many such herds established.

**LAWS AND REGULATIONS.**—It is provided by the organic act of the Bureau of Animal Industry that whenever the plans and methods of the Secretary of Agriculture shall be accepted by any state or territory in which pleuro-pneumonia or other contagious or infectious disease exists, or when such state or territory shall have adopted plans and methods for the suppression and extirpation of said diseases, and such plans and methods shall be accepted by the Secretary of Agriculture, and whenever the Governor or other properly constituted authorities signify their readiness to co-operate for the extirpation of any contagious, infec-

tious or communicable disease, *then* the Secretary of Agriculture is authorized to expend Federal appropriations in that state or territory on investigations of the diseases and on such disinfection and quarantine measures as may be necessary to prevent the spread of the diseases from one state or territory into another.

Under our form of government the control and eradication of diseases of live stock within a state are entirely within the police power of the state, and are only subject to such regulations by the Federal government as may be necessary and incidental to regulating interstate traffic.

To expend Federal appropriation for tick eradication, and use the organization of the Bureau of Animal Industry to assist the states, it is proper and necessary that the inspectors and other employees of the Bureau assigned to such work, should have legal authority to enforce such quarantine and disinfection regulations as may be necessary and agreed upon by the government and the state. Without such authority the Bureau employees can not do effective work, and the Federal Government cannot co-operate with states not provided with adequate legislation.

The laws of the several tick-infested states should therefore provide as follows:

1. That local officers be authorized and empowered to enter premises to inspect live stock; to enforce the quarantine of counties, districts, farms and ranches, and to control the movement of live stock therefrom.
2. That local officers be empowered to enforce such disinfection of animals and premises as may be necessary.
3. That the proper state officials be authorized to issue rules and regulations establishing and maintaining quarantine lines.
4. That states may confer authority upon Federal employees to act, without compensation from the states, as officers of the states in enforcing the state laws and regulations.
5. That the county commissioners, or other proper local officials, be authorized to appropriate funds to assist in the work.

THE LIFE HISTORY OF THE CATTLE TICK.—This is a very important part of the subject, as plans for the eradication of the tick must necessarily be based on its life history which is divided into various periods and stages.

The preoviposition period, which is from the dropping of the adult tick from the host to the beginning of oviposition, ranges from two to forty days. In summer it is three or four days and in winter over twenty days.

The oviposition period, or the time occupied in egg laying, ranges from six to seventy days. In summer it averages ten or eleven days. In winter it is two or three times as long.

The incubation period varies from 17 to 170 days, depending upon the temperature and moisture. The weather in July being ordinarily the most favorable. A temperature of 32 degrees F. for a very short period does not prevent the hatching of viable eggs. Submergence under water does not prevent the hatching of eggs, nor materially change the incubation period.

The non-parasitic period is the time which elapses before the tick reaches a host. A few hours after hatching the larval ticks climb upon blades of grass, sticks or other objects, collecting in masses and waiting for weeks or months for a host. Those develop only that attach themselves to cattle, or rarely to a few other animals, as the horse or mule. It is known that these ticks may live without a host from 43 to 180 days. They avoid direct sunlight. Seed ticks may endure submergence under water from 10 to 157 days. They will survive a freezing temperature for a short period (one hour or more).

The parasitic period is the time from attachment to the dropping of the tick from the host, and ranges from 21 to 58 days. The average is from 26 to 43 days and is longer in winter than in summer. The principal variation in development occurs in the adult stage.

The first molt occurs in from 7 to 12 days, changing from the larval to the nymphal stage, after which the tick has eight instead of six legs. The second molt occurs in from five to ten

days after the first, and is then in the adult stage. The development in the adult stage may be very rapid.

Ticks are quite resistant to both heat and cold, as also are the eggs, but dryness, especially with heat, is destructive to both. Engorged female ticks withstand submergence under water from 24 to 100 hours, after which they may deposit viable eggs.

This information regarding the life history of the cattle tick is taken from Bulletin No. 72, by Hunter and Hooker of the Bureau of Entomology, U. S. Dept. of Agriculture. Their investigations were conducted far South, and it is likely that the time of the various stages of development of the tick further north is somewhat different.

PLANS FOR CONDUCTING THE WORK.—Plans and methods which may be formulated for conducting the work of tick eradication must be based upon the life history of the cattle tick to be effective. To carry out such plans and methods it is quite necessary that adequate state laws and regulations be provided, for while many self-sacrificing citizens will voluntarily submit to the necessary expense and inconvenience connected with the disinfection, and quarantine, and restrictions on the movement of their cattle, others will not observe the instructions of inspectors unless it is plainly shown that inspectors have legal authority to enforce the same.

Competent inspectors, and as many of them as possible, should be furnished by the state and county authorities as well as by the government, and the local as well as the Bureau inspectors assigned to duty in the same section should be under the direction of the Bureau office having immediate supervision over such section. This is to avoid the confusion that would result from men receiving orders from two sources. Care should be used by the authorities to select men having the necessary qualifications; for incompetent and dishonest inspectors are a hindrance instead of a help to the work.

The work should be taken up in as large a territory as the



available number of inspectors can satisfactorily cover, beginning in sections where the conditions with reference to the amount of infection, and co-operation of the local authorities and citizens, are most favorable. The favorable sections are usually found adjacent to the free area.

Numerous investigations and experiments have been conducted by which it has been proved without a doubt that the cattle tick is the only natural means by which Texas fever is transmitted, and that by completely severing the relation between cattle and the ticks the ticks can be exterminated from any locality.

A campaign of education is necessary, as it is important that the public should be informed on the subject of tick eradication. This has been done, especially in localities where the work has been taken up, through the distribution of bulletins and circulars, and by short articles in the local papers. The subject is also receiving attention and tick eradication is being urged at nearly all of the Farmers' Institutes meetings in the quarantined district, and especially in the district adjacent to the non-infected area. It is surprising after all this has been done that many cattle owners say to the inspectors, "I don't believe in the tick theory. Ticks don't hurt cattle. The ticks have always been here and always will be." It is learned from experience that but little is accomplished in the matter of educating the average person of a community regarding tick eradication until the work is actually taken up there, and then one of the most effective means of education is the enforcement of the law by prosecuting violators of the regulations.

It is found that there are many cattle owners who do not read and who never attend a farmers' institute meeting. These are reached only by the inspectors. It is obvious, therefore, that inspectors should be selected who have tact in handling men and who are capable of giving intelligent instructions for the disinfection of cattle and premises, and of imparting the information necessary to convince any person of ordinary intelligence that it is to his interest to co-operate in eradicating ticks.

When it is decided to take up the work in a county or section, it should be thoroughly covered by inspectors to locate all the infected premises and instruct the owners regarding disinfection. This should not be done before the latter part of the season, preferable during the early fall, for in places where infection spectors should be selected who have tact in handling men and is slight it is likely to be overlooked during the early part of the season, necessitating reinspection later to be sure that all infection is located. All infected premises and cattle should be quarantined and kept under control until disinfection is accomplished. If, as in some sections, it might not be deemed advisable to put on the quarantine late in the season, a record of all infected premises should be kept and such premises should be quarantined the following spring. The method of disinfection best adapted to each place should be followed, and the owner should be impressed with the necessity of doing thorough work in order to accomplish disinfection in the shortest possible time and at the least expense and inconvenience to all concerned. It appears from the experience of inspectors that it is more satisfactory to require the owners to furnish the means of disinfection and to apply them than for the authorities to furnish the disinfectants and have the inspectors do the work, and it is certain that much more can be accomplished with the funds available.

Drastic measures must be instituted and must be strictly enforced to accomplish the eradication of ticks from all premises in a locality within a short time, twelve to eighteen months. This requires a large force of inspectors as it is necessary to make frequent inspections of all infected premises to see to the enforcement of the quarantine and to the disinfection of the cattle. This is quite difficult especially before sufficient public sentiment is created in favor of the work.

It is learned from experience that a large number of the cattle owners of a locality accomplish the eradication of ticks from their premises during the first year's work and that they

do this whether their cattle are inspected every ten days or only once in a few months. It appears, therefore, that much more could be accomplished with the available funds by doing advance work for one or two years in new territory instead of starting out with a large force of inspectors to each county to enforce the drastic measures necessary to accomplish the disinfection of all premises within a short time.

Such advance work should be done by assigning only one, or possibly two, inspectors to a county with instructions to inspect the cattle of the county and thus locate the infection, and present the subject of tick eradication to the owners, especially of infected premises, and instruct them in the best method of disinfecting their premises. While such new territory would not be covered more than a few times during the first year, much of the infection would be eradicated, and that at little cost, and public sentiment would be created in favor of the work, making it much easier to enforce disinfection later on the premises of indifferent and careless owners.

Various methods have been suggested to free cattle of ticks, as follows: By picking or brushing them off; by smearing or spraying the animals with a disinfecting solution; by dipping the ticky animals in a vat containing a solution that will kill the ticks and yet not materially injure the cattle; or by the "soiling" method.

Picking off the ticks, unless at the same time disinfectants are applied, cannot be considered a satisfactory method. Neither is it advisable in hand treating animals to apply disinfectants without first removing the large ticks. The hand treatment of cattle is quite laborious, especially when it must be repeatedly done on account of not having tick free pastures on which to put the cattle after they are disinfected. It is therefore not applicable for large herds. For large herds, or where several small herds can be collected without too great inconvenience, the plan of dipping should be followed. An emulsion of Beaumont petroleum is probably the most satisfactory disinfectant.

The "soiling" method, suggested by Curtice, which is based upon the life history of the tick, is the most satisfactory and should always be followed where the conditions are applicable. It consists in placing the cattle in a tick free inclosure for three weeks, then removing them to another tick free inclosure for three weeks more by which time the cattle should be free of ticks, for it is seldom that they remain on cattle to exceed forty days and probably never except during cold weather. By retaining the cattle not to exceed three weeks in each lot reinfection is prevented as sufficient time has not elapsed for any ticks to drop off and lay eggs and the eggs to hatch before the cattle are taken to the next tick free inclosure.

Pastures may be freed of ticks by excluding cattle for a definite period, or by cultivation. Whenever it is practicable to do so, cattle should be excluded from infected pastures from June first until late fall, or from September first until late the following spring.

Cattle and pastures may be freed of ticks at the same time by pasture rotation or by the "feed lot" method, recommended by Morgan, which, like the "soiling" method, is based upon the length of time the ticks live upon cattle and the time required for the eggs to be laid and hatched and the seed ticks to attach themselves to their hosts.

**DIFFICULTIES AND OPPOSITION.**—The difficulties to be overcome in connection with tick eradication are numerous. It is frequently very difficult to get effective co-operation and support from the local authorities. For instance, in many cases a County Board of Health fears that the work will not prove popular politically and consequently the members will refuse to take any action whatever unless it is vigorously urged by a large number of their prominent farmers and stockmen. This is true even when each member of the board is thoroughly convinced of the importance to his county of giving both his official and his moral support to the work, and of doing his part towards the enforcement of the state laws and regulations. It is also exceedingly

difficult to get local authorities to employ competent inspectors. In many instances qualification is not considered at all, which is made apparent by the appointment of cripples and old decrepit men who are wholly incapacitated for such strenuous work.

Thorough and systematic work is absolutely necessary, but it is almost impossible to make the average cattle man realize this and to get him to act accordingly. To control and eradicate ticks it is necessary to control the movement of cattle. Considerable opposition therefore results from the effort to enforce the necessary regulations in counties and localities where it is the custom to let cattle run at large. This opposition comes mostly from persons who have only one or two cows and from persons who have no cattle. The former seem to think they are being unjustly deprived of their rights by not being permitted to let their cows scatter ticks throughout the neighborhood. The latter are composed principally of shyster lawyers looking for clients, and of persons opposed to their county expending any money for such work.

Every imaginable objection has been made by owners to the disinfection of their cattle, but only two need be given consideration, namely, that there is some expense attached to the purchase of the disinfectant, and that it requires some energy to apply it to the cattle.

RESULTS OBTAINED.—The first aggressive measures were taken against the cattle tick when Congress appropriated \$82,000 with which to undertake experimental work in co-operation with state authorities, beginning July 1, 1906. The season was far advanced before men could be put in the field, and the work properly organized, and yet a great deal was accomplished that year. For the next fiscal year, ending June 30, 1908, \$150,000 was appropriated, and \$250,000 has been appropriated for the current fiscal year, ending June 30, 1909. The work has been pushed so far as possible with the available funds, and much has been accomplished.

Since July, 1906, 50,000 square miles, in round numbers,

have been disinfected and released from quarantine, and there are 70,000 square miles, in round numbers, under provisional quarantine from which cattle may be shipped on inspection for purposes other than immediate slaughter, but where the work has not yet been completed. The work is now well advanced in a large additional territory. Now that we have had a couple years' experience, more rapid progress may be expected in the future.

VISITOR—Your horse looks very slick and well rounded out. I suppose that comes from feeding it with punctuality.

Boy—No, sir; we don't feed him anything but oats and alfalfa hay.

SECRETARY LYMAN desires to correct the title of the paper announced in the August number of the REVIEW, to be presented at the A. V. M. A. at Chicago by Dr. Geo. H. Berns, from "Subcutaneous," to "Subcartilaginous" Abscess of the Foot, he having misread the title as given by Dr. Berns.

CAT SAVES ITS LIFE BY TRACHEOTOMY.—Tracheotomy is a delicate surgical operation. Even the best of surgeons do not think of performing it on themselves. In that they have been bested by Dr. Ginger, a pet cat in the morgue of Bellevue Hospital. Dr. Ginger cut open his throat and windpipe, removed a long and stout fishbone that was choking him to death slowly and then applied nature's salve to heal the wound. The only surgical instruments he had were his own sharp claws. He is doing nicely now, and in a few days will be all right again.—*New York Times*, August 3, 1909.

CONVERSATION OF BEES.—In an article on bees and ants by Gaston Bouwer in the *Revue Hebdomadaire*, the writer contends that these insects carry on conversation among themselves, and that while this is done by means of their feelers, they are not entirely dependent upon them. "A whole colony," says Mr. Bouwer, "in an ant house or a bee-hive often responds instantaneously to a signal which may have been given without contact. It is interesting to see an ant laborer for whom a burden is too heavy go to a fellow, make a sign or give a certain touch with his feeler and then see the second insect join the first in lifting or moving the object."

## OPPORTUNITIES FOR LIVE STOCK BREEDING IN NEW JERSEY.\*

BY FREDERICK C. MINCKLER, PROFESSOR OF ANIMAL HUSBANDRY, NEW JERSEY  
EXPERIMENT STATION, RUTGERS COLLEGE, NEW BRUNSWICK, N. J.

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I greatly appreciate this opportunity of meeting with so distinguished a body of live stock experts. An association of professional men based upon principle and guided by definite purposes; an association that has not only planned, but successfully executed various measures of interest and value that are of vast importance to live stock breeders of this state.

The present day veterinarian is recognized as a genuine professional expert. His dealings and relations with the live stock growers or breeders are many, and in all lines of stock raising his talents are in demand and always will be.

The real object of this state association of veterinarians is undoubtedly to promote interest in live stock husbandry, this being the purpose, the work is very closely associated with that planned and executed by the animal husbandry division of the various Experiment Stations and Colleges; and surely where there is unified action of intent and purpose the ends desired will surely be reached. I firmly believe that the veterinarians, located as they are at the leading live stock centers in the various counties, can do a great deal more than any other combination of live stock workers toward encouraging the farmers and breeders in producing more useful, as well as more marketable types of farm animals. By means of personal contact and professional advice, it is possible for the veterinarian to meet with the farmer at his own home, and to encourage as well as demonstrate to him the importance of producing only marketable individuals, and to assure him that individuality, as well as blue blood and rich breeding, is one of the secrets of live stock success. The mere

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\* Read before the Twenty-fifth Anniversary Meeting of the Veterinary Medical Association of New Jersey, at Atlantic City, July 15-16, 1909.

enactment of stringent laws, of a questionable character and value, aimed to advance live stock agricultural enterprises is, in my mind, insufficient; for, after all, it is instruction, encouragement and sympathy that the farmers and breeders need to-day if real advancement is the result desired.

I maintain that the opportunities for live stock breeding in New Jersey are exceedingly numerous, and that none of the Eastern States are equally favored as regards markets and facilities for transporting farm products; and, furthermore, that the present day demand for native New Jersey live stock products greatly exceeds the supply. With such market centers as Philadelphia on one hand and New York City on the other, and in addition, the clamor for produce and meats from the vast number of popular coast cities that demand first-class and high-priced live stock products there is an outlet for a great many farm products that the New Jersey farmer does not begin to supply at the present time. The argument has been presented at various times that the Eastern States cannot compete successfully with the corn belt states and those of the far west in producing live stock for either market or breeding purposes. The reason given being (1) that our pasture season is necessarily short; that the insect pests are exceedingly destructive; that the winters are somewhat severe and (2) that the grain products necessary in the producing of salable live stock are by far too expensive and high priced for the farmer and breeder to purchase and attempt to successfully compete with the ideal natural resources that are to be found in the Middle West. For the present let me challenge the truth of this argument. I will admit that our fences are poor; that our soil has to be fed almost with a spoon before it will produce crops; that we do not have the abundant supply of palatable green pastures that is found, but scarcely appreciated in the West, and furthermore, that we do not produce the acreage of grain per farm that is to be found in the West, but in spite of these drawbacks the value per acre of farm products, including corn in this state, greatly exceeds the estimates recorded per acre for the



West, and the additional cost of production is more than met by our splendid markets. Last year according to statistics furnished by the Agricultural Departments of the various states, New Jersey ranked second in bushels of corn per acre when comparison was made with all of the states in the Union.

It has been said, and rightly so, that "any person that can plow and harrow can farm in the West, but it takes a man with brains and ingenuity to till successfully and profitably in the New Jersey soil," for these and other reasons I am thoroughly convinced that the New Jersey farmers and live stock breeders have agricultural opportunities that excel in many ways those that face the Western farmer; and that the real problem is only a matter of educating the tillers of the soil to such a degree that they will utilize their brains as well as their muscles.

To be a successful breeder of live stock is an attainment well worth while. The fundamental principles involved are many and difficult. In order to win any measure of success in producing any class of animals the breeder must first decide definitely upon what race or breed of animals he is desirous of producing, then study the market types until he is able to fix firmly in his mind an ideal type. This being done he must exercise his talents and ingenuity to the highest degree in realizing and fixing this ideal type.

The "Old Country" farmers have established a world-wide reputation as breeders. The Scottish farmer is noted for producing the Clydesdale horse and the Highland sheep; the Irish farmer is famous for producing the Irish hunter; the English farmer stands out in a class by himself as a Shorthorn breeder, while the French farmer is famous because he is largely responsible for the type of the present day Percheron horse. If you will go on further to the Island of Guernsey, you will find nothing in the cattle line but Guernsey cattle; cross the channel to the Isle of Jersey, you find nothing but the famous Jersey cow, and so on throughout all of these countries you find groups of farmers in each section famous because they have directed their

energies toward producing a single class or breed of farm animals, and not meddled indiscriminately with a half-dozen types and breeds.

In my judgment the greatest drawback to the live stock breeders in New Jersey is caused by their indecision as regards any particular class or breed of live stock; and that in their many attempts to produce a combination animal their efforts are almost failures. We have in New Jersey farmers and breeders that are especially skillful in the raising of horses, but in many cases they are not producing the most profitable type. Speed rather than utility has been the guiding principle and the residue is surely a misfit aggregation. An animal bred especially for speed and failing to possess or inherit the quality is of little value as a farm work horse, and when classified at the market centers is designated rightly as "trash."

I am thoroughly convinced that the farmer's horse is the draft horse, and that the average farmer cannot afford to produce any other type for use as a farm work horse. Two years ago I visited a great many farmers in New Jersey with the idea of obtaining information relative to the live stock being produced by the average farmer. I found that not one in fifty that were being used upon the farms were actually raised in New Jersey; that the average farmer instead of using brood mares of the draft type on his farm was keeping three or four of the misfit mongrel, weasel-bellied variety; individuals that were in many cases too light for farm work; too unsightly for market, by far too nervous for available farm help to manage and were being used on the farm simply because they were a failure from a speed or road standpoint and could not be sold at a profitable figure when placed on the market. In a few cases the farmers were producing the heavy type of draft horses, and it is needless to say that their experience from a profit standpoint was more encouraging.

It is not my intention, or desire, to say one word against the producing of the Roadster or the Thoro-bred horse, but I have

always maintained that the farmer's horse is the draft horse; that cross-breeding, or indiscriminate mating of the light horse type with the average run of farm mares is undesirable and unprofitable, and that the farmer cannot afford to spend the time, go to the expense of breaking, educating and mating the speed class of horses when he can produce farm work horses by using pure bred draft stallions on grade or pure bred draft mares that will result in fixing a type of farm horses that will always be in demand on the market where they readily sell without argument at profit sharing prices. Blemishes and unsoundness detract less from their value; they can be marketed unbroken, young and green, providing they have the necessary weight, are of a drafty conformation, and can handle heavily loaded truck wagons with ease and grace.

There is, however, a splendid outlet for fancy roadsters and coachers and fabulous prices are often paid for real top-notchers; but the farmer seldom obtains these high figures simply because he does not have the time to sufficiently educate, mate, break and handle this type of animal and it seems to me that the production of this class of horses can best be left to the special breeder or horseman who has the talent, experience and ability to breed and market them first-handed. I know of no state that offers greater inducements for this class of breeders than is found in New Jersey.

The experiences of our most successful breeders of horses, however, of any class teaches us that the breeding sire in order to be of the most good in the stud must be possessed of both individuality and breeding. The pedigreed scrub, as well as the intruding grade mongrel, has done a great deal to discourage horse breeding in this state. A great many of the stallions that are offered for service in this state would scarcely qualify as profitable selling geldings if emasculated, and it is extremely difficult for me to imagine a breeding sire in his prime that will be a noted success in the stud if he lacks those external evidences of utility and conformation such as will enable him to classify on the market as a salable market type.

Up to September 1, 1908, there were no restrictions as to type, individuality or breeding of the stallions offered for public service in this state. The worst mongrel of a beast was permitted to proceed unmolested in the breeding pen, and as a result of this cheap service a large number of colts were foaled that were nothing but misfit youngsters, animals that were unprofitable, unsightly and otherwise undesirable. The Stallion Examining and Registration Board, after holding regular examinations in each of the several counties in the state during the past year, report as follows: Of a total of 282 stallions examined 42, or 15 per cent., were found to be unsound and otherwise undesirable to recommend for breeding purposes. One hundred and nineteen of the 241 licensed were of pure breeding and registered, while 122 are licensed as grades, and in many cases these grades have scarcely a trace of known blood or desirable breeding in their veins. Of the stallions disqualified a great many of them lack unmercifully in individuality, their lineage was absolutely unknown and their services were peddled at prices ranging from \$1.50 to \$10. It would seem from these figures that the New Jersey breeders are in some cases losing sight of the value of pure bred sires, for in one county the records show seven pure bred and registered stallions and twenty-five grade sires in service. Further examination shows that the stallions now in service as regards to breeds and types are as follows: Roadster 149, Draft 49, Coach 11, Arabian 1, Morgan 4, Hackney 12, Jacks 14, Ponies 1.

That a great deal of good will result from this legislation there is no question. It will be necessary, however, to have the co-operation of all of the live stock workers in the state that are interested in elevating New Jersey horse breeding interests to the front if the greatest good is to result to the breeders themselves. The veterinarian can do a great deal toward eliminating the mongrel stallions and advising the breeders to only mate such individuals that will, in his judgment, perpetuate desirable traits.

The eleven stallions that were recently imported by the Live Stock Commission are now stationed in eleven different counties

where their services are available through farmers breeders' associations, and it is gratifying indeed to note the appreciation that the farmers in the various sections are exhibiting, and the efforts that they are exerting to secure the services of these stallions. The farmers are permitted to mate only draft mares with the heavy draft stallions, and in many cases where the farmers or members of the breeders' associations do not own mares that will pass the examination for soundness, or will classify as to type, they are purchasing brood mares for the specific purpose of using the heavy draft stallions. Over three hundred and fifty mares have been bred to date to the state stallions now in service, and it is hoped in this way to encourage the farmers to produce a more useful as well as more marketable type of farm horse.

The breeders of cattle in our state must produce only representatives of the dairy breeds, for I doubt the success of making beef profitably in a dairy section. To my knowledge there is only one herd of strictly beef cattle in the state, and so far they have only been a means of expense and experience to the owner. We are in a position to supply dairy products to the greatest milk and butter markets in the world, and in doing this the farmer must use only the best types of profitable dairy cows. There is a great difference between a dairy farmer and a cow dealer, also between the cow dealer and the cattle breeder. In many cases the cow-dealer dairymen are maintaining nothing but animal boarding barns. They are feeding far too many unprofitable cows with five and ten dollar bills, which means that they must resort to some other type of cow in order to secure funds that will repay them for the labor exerted. The cow breeders must not be compared with the cow dealer, for the cow dealer looks upon cows as mere cows, whose soul purpose is to produce a certain number of pounds of milk per year; while the breeder's aim must be improvement, and he cannot be satisfied with an average yield of milk, for his purpose is to *improve the type* as well as the function of the animal. The farmer-dairyman who neglects his cows during the summer season to care for his farm usually ne-

glects his farm to care for his cows during the balance of the year. As a result neither proposition will pay, and he concludes that farming or dairying is an unprofitable enterprise.

It is unfortunate, however, that the dairymen in New Jersey are not producing, or raising, their own cows. In a great many cases the dairymen depend entirely upon the New York state drover, or their neighbors, to supply them with dairy cows to replenish their herd, and as a result of this practice they often keep a cow a year or more before they find out definitely whether she is a profitable animal or a mere boarder. The most successful dairymen in the state are those who raise their own heifer calves, the result of mating their very best cows with a pure bred sire, whose family record is a milk record and whose individuality emphasizes his being able to perpetuate the milk making functions. The mere freshening of a dairy cow by a mongrel, or scrub, sire with nothing to recommend him but his ambition is certainly a practice that should be condemned. It has been demonstrated time and again in this state by successful dairymen that a heifer raised on the farm, the result of such mating will produce as much milk during the first year of her lactation as the average cow will produce that is purchased of the cow dealer or drover for the same amount of money that it requires to raise this heifer until she freshens for the first time. The second year she invariably does better and gradually comes to her prime and increases in value each year, while a great many of the purchased cows are mere "transient boarders." Our farmers should surely raise their own choice heifer calves; keep accurate milk records of all cows and maintain nothing in the herd that is not a profitable producer of milk or butter, and the only way to own such a dairy is to breed the animals on our farms.

Opportunity is afforded and success assured in producing any live stock product where there is a growing public demand made by a wealthy class of people for a certain commodity that can be readily produced, regularly and easily placed on a steady market where the prevailing prices insure reasonable profits. It

is evident that there is an increased and popular demand for choice, and especially early marketed mutton among the upper classes of people in our larger cities, and of late it has been impossible to meet this want in season. People in general have been educated to appreciate choice meats, and only recently the common prejudice against the so-called "flavor" of mutton has subsided.

I have visited several hundred farms in this state in an attempt to find out as far as possible the actual conditions affecting, chiefly, the live stock farmer. It was possible in this way to meet with the farmer on his own farm and talk over matters of interest relative to the particular class of stock he was raising. While comparatively few were found that could be termed large mutton producers, yet in every instance where sheep were found the owner frankly and willingly admitted that for the money invested and the food consumed his sheep and lambs yielded by far the largest profits and required the least care of any live stock on his farm. In support of these statements the chief reasons given were: First, their superior grazing qualities and ability to thrive and be content on pastures unsuitable to either cattle or horses; second, the fact that they willingly consumed all kinds of rough fodders not readily eaten by other animals without subjecting them to expensive methods of preparation; third, their superior weed-destroying habits and likings; fourth, added fertility to the soil and the equal distribution of same; fifth, that they required less labor during the busy season, less expensive winter quarters and yielded salable products always in demand at local markets at good prices. The greatest difficulties seemed to be: First, lack of proper fences; second, destruction from stray dogs; third, inability to purchase from the drover store ewes with good mouths that were sure and regular breeders; and fourth, a scarcity of experienced shearers in season. It is readily seen that the desirable features greatly outnumber the objectionable ones; and furthermore, it was found that the more successful breeders have almost solved the stray difficulties mentioned.

On the one hand, the farmers depend entirely on the local or visiting drover for his breeding ewes, which means that he buys western or southern culls varying in age and condition. Usually they are very common, if not inferior in breeding, and very often the purchaser finds that they are old and will not breed nor even fatten under the changed conditions. It is not uncommon that such ewes are mated with a scrub ram of unknown breeding, regardless of his condition or vigor. The ewes are not "flushed" nor conditioned in any way and no special feeds nor extra care or quarters furnished until weaning time when all hands are required to care for the flock. The lambs are sold as soon as possible, also the entire flock of ewes disposed of after being shorn and slightly "warmed up" by the use of a little grain and cheap roughage. The only representative of the flock that is kept over from year to year is the unsightly scrub ram, and he must make his way by working the tread power.

The other practice which is far more successful consists in selecting the choice twin-bearing ewes and keeping them in the flock during their usefulness, gradually culling them by rigid selection and reinforcing the flock each year by the additions of the choicest ewe lambs weaned from the most prolific and heaviest milking mothers. In this way it is possible to increase the number of lambs dropped, which, in turn means more profits. Instead of the mongrel ram, a pure-bred sire heads the flock and the lambs are more growthy, mature earlier and show the results of their better breeding in many ways. The ewes are regularly flushed before breeding, either by the addition of grain to the ration or by changing them over to a fresh pasture, thus insuring a more uniform settling among the ewes. The profits resulting from this method were surprising.

It is to be regretted that so few sheep raisers in this state pretend to raise or grow their breeding ewes. An offer of \$5 or possibly \$10 for a youngster that can be easily carried under their arm tempts the growers to part with them regardless of their future value. The mere buying of culled or discarded ewes



from the extreme south or west does not insure profits in lamb or mutton production; but the selecting and maintaining of the choicest twin ewe lambs from tried and known heavy milking mothers as foundation stock or breeders, is sure to result in more successful practice for the shepherd.

The New Jersey farmer is interested in that class of live stock that can be cared for at the least expense, and it must be admitted on all sides that a flock of ewes require less attention than the dairy herd, and as a machine for converting feed-stuffs into salable products the ewe ranks even above the dairy cow, being able to put firm flesh on her back, loin and leg as cheaply as the cow makes milk, and besides, offers her fleece as additional evidence of her superior feeding qualities. It was further noticed that the farms on which the flocks were kept from year to year needed far less commercial fertilizer; that there were fewer noxious and troublesome weeds, and that the physical condition of the soil was superior both as regards tilth and productiveness.

A successful shepherd must like his business and have confidence in the ability of his charges to grow and yield profits, and must know sooner or later the value of rigid selection and regular culling; also, the importance of using only pure-bred utility sires. Mere keeping of sheep without caring for them is poor business, and the party who follows this practice ought to fail, for it is doubtful if any class of farm animals require more devoted attention than is demanded by the ewe during the lambing season, especially if it is during the winter, as a few dead lambs killed by mere neglect often makes the difference between success and failure.

We have in this state ideal conditions for the raising of sheep and early lambs. The pastures for the most part are high and dry, thus free from parasites often troublesome in low marshy districts. There is an abundance of hilly grass land, too rough and stony to cultivate, that will grow luxuriant grass and forage

for the flock while their browsing tendencies increase their value as animals to have about the farm.

The whole question of opportunities or profits in the live stock breeding operations in this state rests with the individual farmer himself. We have the necessary markets, splendid grazing pastures, and can produce any variety of feed and roughage necessary or desirable for their maintenance. Our depleted farms will welcome the added fertility that the live stock will furnish and the fertilizer proposition is a very important one for the New Jersey farmer to consider. If our farmers have a liking for live stock and will carefully select, properly feed and intelligently breed the choicest types of any of the various breeds that thrive in this state, there is no doubt but that the Garden State of New Jersey offers opportunities for the breeder of either horses, cattle, sheep or swine.

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DR. H. D. RODMAN, of Kentucky, recently paid \$2,525.00 at public auction for the imported Jersey cow Oxford's Fontaine 224580. She is 7 years old.

Oxford Ixia, of St. Saviour 213909, also 7 years old, went to A. M. Bowman, of Virginia, at \$2,225.00.—*Horn and Hoof*, July, 1909.

A NEW use for the bicycle pump has been discovered by a lad near O'Brien, Wash. He inflated the udders of four dry cows, and sold them to an unsuspecting dairyman as fresh ones.

It does not speak well for the dairy knowledge of the buyer to be duped by such an easily detected swindle. A casual examination would have detected the presence of air in the cows' bags.—*Horn and Hoof*, June, 1909.

MR. BILLINGS RIDES IN RUSSIA.—A dispatch from Moscow says that the trotting races there one Sunday were given additional importance by an exhibition of Mr. G. K. Billings' trotters. Lou Dillon, driven by her trainer, made a splendid showing, while Terle, ridden by Mr. Billings, gave a performance which greatly interested Russian sportsmen. Trotting under saddle is unusual in Russia. The ladies among the spectators threw flowers at the horses. The trotting society gave a banquet in honor of Mr. Billings and presented him with a loving cup.—*The Rider and Driver*, July 24, 1909.

## TUBERCULOSIS AND ITS RELATION TO THE PRODUCTION OF SANITARY MILK.\*

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To be honestly called sanitary, milk must be free from disease-producing bacteria, as well as free from the fermentative and putrefactive germs and dirt. Unfortunately, however, the term has been loosely used and has lost its definite meaning. Milk produced with more than ordinary care to keep it clean, with little or no regard to the health of the cattle, is sold under the name of sanitary milk and, in some instances, ordinary market milk is sold under the same designation. Sanitary milk, properly so-called, however, is milk that does not contain any of the disease-producing bacteria and that is comparatively free from the fermentative and putrefactive bacteria and dirt. The tubercle bacillus being one of the disease-producing organisms, the first point to be considered in discussing the relation of tuberculosis to the production of sanitary milk is whether or not tubercle bacilli may pass from the body of a cow afflicted with tuberculosis into the milk.

In the beginning, the tubercle bacilli in the body of a diseased animal are to be found only in the diseased areas in the affected organs<sup>1</sup>, surrounded or hemmed in by a collection of small bodies known as cells, which have apparently collected there for the purpose of shutting off or limiting the effects of the bacilli. In this stage the bacilli cannot leave the body. The cow will show no symptoms of disease externally, but will react to the tuberculin test. The diseased area gradually extends and later the tissue dies and breaks down into a soft cheesy mass. If the extension of the diseased area has involved or embraced blood vessels or the natural channels or tubes or canals common to the various organs, small particles of the cheesy substance containing tu-

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\* Read before the South Carolina Live Stock Association, Feb. 4, 1909.

bercle bacilli may enter these tubes or canals and be carried by the fluids or air currents flowing within them to other parts of the body or to the exterior of the animal.

For example, if a tuberculous area in one of the lungs extends into a small vein, particles of the broken down tissue containing tubercle bacilli may pass into the vein and be carried by the blood stream to the udder, and be deposited there, or it may pass out with the milk. In the latter event, the milk will be temporarily virulent, if it is deposited in the tissues of the udder, another area of tuberculosis is likely to develop here, which in its gradual extension may open into one of the gland cavities or milk cisterns, discharging into these cavities broken down tissue and tubercle bacilli which are subsequently drawn off with the milk.

Milk from a cow in which the udder is affected with tuberculosis nearly always contains tubercle bacilli and will usually transmit the disease to animals consuming it in the raw state. The udder in such cases may not to the casual observer be manifestly diseased. Compared with the pronounced symptoms seen in the disease of the udder commonly known as garget, the symptoms of tuberculosis of the udder are not very noticeable. Only a small area of the gland tissue need be affected with tuberculosis to insure a more or less continual introduction of tubercle bacilli into the milk, and the external signs of the presence of the diseased area may be so slight as to be detected only by careful and repeated examinations. Tuberculosis of the udder is attended with some swelling of the affected quarter, but the swelling or enlargement develops slowly and gradually. It is not hot and painful as in garget, and, moreover, the milk may not be perceptibly changed for three or four weeks after the disease begins in the udder. Cases have been observed in which no pronounced change has occurred in the milk until eight and ten weeks.<sup>3</sup> Careful and repeated examinations at frequent intervals are necessary to discover udder tuberculosis in the early stage. Later on, when the enlargement of the diseased quarter has reached its full development, and the affected quarter has

become hard and nodular, and the milk has been replaced by a yellowish or reddish watery fluid containing clumps and flakes, it is readily detected, although even then it may be confused with garget by inexperienced observers.

Usually, when the udder is tuberculous the disease exists in other organs in the body<sup>4</sup> and has sometime previously reached the stage in which clumps of diseased tissue containing tubercle bacilli enter the blood vessels or other natural channels and are carried to various parts of the body. Therefore, udder tuberculosis, in the later stages at least, is usually attended with a poor general condition. It is possible, however, for tubercle bacilli to pass through the opening in the teat up into the gland and set up the disease in the udder primarily, but this is not the usual channel of infection. In 119 cases of tuberculosis of the udder examined post-mortem by Lungwitz<sup>4</sup>, other organs were also diseased in every case.

The udder is more frequently affected with tuberculosis than is generally realized. In 1,200 tuberculous cattle examined post-mortem in Pennsylvania, nearly all of which were dairy cows, Pearson<sup>5</sup> found the udder affected with tuberculosis in 104, or 5.75 per cent. Statistics compiled by Ostertag from the records of tuberculous cattle slaughtered in the Berlin abattoir show that in cows in which tubercle bacilli have been discharged into the blood channel at one time or another during life, the udder is tuberculous in 5 to 10 per cent. of the cases.<sup>6</sup>

Milk from cows in which the udder does not show any external symptoms of disease, but which are affected with tuberculosis of other organs has been found to contain tubercle bacilli in numerous instances. The results obtained in experiments with the milk of such cows show that the milk may produce tuberculosis in experimental animals to which it is fed or into which it is injected when the udder is not apparently diseased, but there was a marked variation in the percentage of cattle found to give virulent milk in the different experiments. Ernst<sup>7</sup> tested the milk from 36 cows and found that the milk of 12, or 33.3 per cent. produced tuberculosis in experimental animals. The milk

of 49 cows was examined by Ostertag<sup>1</sup> and the milk of only one of the animals inoculated with this cow's milk developed the disease. The results obtained by other investigators are between these two extremes, but differ more or less widely. This disagreement in results is due to the fact that some of the experiments were made before the tuberculin test was known, to the differences in the location, extent and distribution of the disease in the cattle used in the experiments, and also to the fact that the conditions under which the experiments were conducted did not in all cases provide against the possibility of tubercle bacilli entering the milk after it was drawn from the udder, an occurrence by no means unlikely as we shall see later.

There is one point, however, on which the experimental results are in agreement and that is, that the tuberculous cows with apparently healthy udders which are most likely to excrete tubercle bacilli are those in which the disease is advanced and more or less extensive and manifested by external signs or symptoms. The records contain the results of the examination of the milk of 51 such cows and the milk from 13 of them, or 25 per cent., transmitted the disease.

Tuberculous cows in which the disease is not manifested by any external signs and in which the disease can only be detected by the tuberculin test may also excrete tubercle bacilli in their milk, but much less frequently than cows with tuberculous udders or which are in the advanced stages of the disease. In just what proportion of such cows we may expect to find the milk virulent cannot be definitely stated. Here again, the condition will depend upon the location, extent and stage of the tuberculous areas, and in these points the tuberculin test gives no information.

The tuberculous cow which can be discovered only by the tuberculin test, while not entirely unlikely to infect the milk with tubercle bacilli, is the least dangerous of the three classes of tuberculous cattle we have considered, and where, for any reason, the tuberculin test cannot be applied to an infected dairy herd, a great improvement can be made in the sanitary condition

of the milk by prompt removal of cows from the milking line which show symptoms of udder tuberculosis or any external signs of the disease, and attention to hygienic conditions and cleanliness. The objection to the tuberculin test that it discovers the disease in cattle when they are only very slightly affected and would still be useful as dairy animals for a time is, therefore, not an excuse for failure to make any improvement in the sanitary condition of the milk supplies of cities and towns.

Milk which is free from tubercle bacilli when drawn from the udder of the cow may become infected during milking or in subsequent handling. The experiments of Gaffky and Eber in Germany and of Schroeder<sup>8</sup> in this country have shown that tubercle bacilli may be present in large numbers in the manure of tuberculous cows which do not exhibit any external symptoms of the disease and in which the infection can be discovered only by the tuberculin test. This can occur even when the disease does not exist in the digestive organs. The greater portion of the sputum coughed up by the cow afflicted with tuberculosis of the lungs is swallowed and leaves the body with the manure. The bacilli contained in this material are not apparently affected by the acids of the stomach or the other digestive fluids. Tubercle bacilli fed in water to healthy cattle were found in the manure on microscopical examination and experimental animals inoculated with a small quantity of the manure died of tuberculosis. Particles of the manure may readily fall into the milk from the body surface of the cow during milking, and some of the manure which drops on the floor or is spattered on the fittings may become dry and powdered and rise in the air as dust and fall into the milk pail. If the manure contains tubercle bacilli the milk will become infected. Schroeder inoculated experimental animals with manure from four cows which showed no evidence of tuberculosis except a reaction to the tuberculin test and found that the manure of three contained virulent tubercle bacilli. He then soiled milk from healthy cows with about as much manure from these three cows as would get into it in a dairy barn of average cleanliness and injected the milk into experimental ani-

mals, with the result that most of these animals developed tuberculosis. It is not unusual to find particles of manure in market milk. Of 172 samples of milk collected in Washington, 121 contained a sediment consisting partly of cow manure.

When the uterus, or womb, is affected with tuberculosis, tubercle bacilli may pass out from this organ through the vulva and may gain access to the milk after it is drawn from the udder in the same manner as the bacilli discharged with the manure. According to the statistics of Pearson<sup>5</sup> the uterus is diseased in 5.5 per cent. of the dairy cows affected with tuberculosis, a sufficient number to render this source of infection worthy of consideration. In tuberculosis of the lungs, when the diseased tissue is dead and broken down, the mucous fluids passing out of the nasal cavities and mouth may contain tubercle bacilli. As has been stated a large part of the sputum coughed up by a cow in this condition is swallowed and passed out with the manure, but the experiments of Pearson and Ravenel<sup>5</sup> in Pennsylvania show that some of the infectious material is coughed out and some also passes out with the saliva. By attaching a specially constructed bag to the muzzle of tuberculous cows to collect the material coming from the mouth and nostrils of such animals they found that sputum and particles of diseased tissue from the lungs and bronchial tubes were projected by coughing cows, while only saliva came from cows that did not cough, and upon examining these materials they discovered that in all of them the sputum, particles of diseased tissue and saliva, contained tubercle bacilli. During the act of coughing or bellowing the fluids of the mouth and nasal chambers may be thrown out in the form of a spray of small, invisible droplets of fluid, and any sputum or particles of diseased tissue in these fluids will pass out with them. They may be deposited on the food of another animal, or they may fall on the floor or stall fittings and be licked up by another animal or become dry and pulverized and pass into the air as dust. If these fluids contain tubercle bacilli, as was the case with the animals used in the experiment, there is not only a chance of the milk produced in the barn becoming in-



fect, but also of animals contracting the disease from eating the contaminated feed or licking up the discharged materials or licking surfaces contaminated with them. The lungs are diseased in 50 to 60 per cent. of the cattle afflicted with tuberculosis. These organs are more affected than any other. Pearson and Ravenel also found that scrapings made from feed boxes used by tuberculous cattle would transmit tuberculosis when injected into experimental animals. Another experiment by the same investigators demonstrated that tubercle bacilli are not thrown off to any extent with the breath expired by tuberculous cattle. Twelve experimental animals were kept for  $2\frac{1}{2}$  to 26 hours under such conditions that the air they breathed was largely composed of the breath exhaled by tuberculous cows and none of them contracted the disease, although tubercle bacilli were found in the saliva and sputum coughed out by some of the cows. The infection of milk with the tubercle bacilli in the manure from tuberculous cows, in the discharge from the uterus, or in the saliva and the material coughed up from the lungs will be largely influenced by the structure and the lighting and ventilation of the barn, the degree of cleanliness of the barn and the cows, and the kind of milk pail used. Barns with smooth floors, walls and ceilings can be kept cleaner and with less trouble than those in which these structures are rough and uneven. Light also induces cleanliness by exposing the dirt while the sunlight admitted to well-lighted barns assists in drying the excretions and facilitates their removal. Proper ventilation removes the dust-laden atmosphere and replaces it with the cleaner air from the outside. In such a barn there will be less dust in the air, and hence fewer bacteria, than in an unclean, poorly ventilated barn.

The condition of the cows with regard to cleanliness, as well as the time at which they are cleaned, has a marked effect upon the amount of manure and other dirt in the milk. At the Illinois Experiment Station<sup>6</sup> it was determined that milk drawn from dirty, unwashed udders contained ninety times as much dirt as milk drawn from udders that had been washed, about  $1/40$  of

an ounce of dirt being in the milk from the unwashed udder. If it be true, as has been stated, that one-half of the dirt falling into milk is dissolved, this only represents half the actual quantity in the dried state. A large proportion of this material consists of particles of manure. In a test at the Storr's Experiment Station it was shown that when the udder and flanks were reasonably clean and the udder was wiped with a damp cloth before milking, the milk contained only one-tenth of the number of bacteria found in it when the wiping was omitted. Cleaning or brushing the cows immediately before milking will greatly increase the amount of dirt and the number of bacteria in the milk. The covered milk pail reduces the dirt and bacteria about one-half.

The facts which have been related show how tubercle bacilli may pass from tuberculous cows into the milk. It may now be of interest to know to what extent tubercle bacilli are found in milk as it is delivered to the consumer. I have examined the records of the examinations of samples of milk collected in fourteen cities in other countries and in two cities in the United States. The number of samples collected in foreign cities amounted to 1,271, and the percentage found to contain virulent tubercle bacilli varied in the different cities from 2.8 per cent. to 56 per cent. The two American cities included in the records are Boston and Washington. In Boston twenty-five rabbits were inoculated with samples of milk collected from city dairies and 3, or 12 per cent., developed tuberculosis. The examinations in Washington have been much more extensive. Mohler<sup>12</sup> examined 73 samples of milk and found 2, or 2.7 per cent., to contain virulent tubercle bacilli. Anderson<sup>12</sup> examined 272 samples, of which 49, or 18 per cent., killed the experimental animals with peritonitis or other acute disease before there was time for tuberculosis to develop, leaving only 223 to be tested for virulent tubercle bacilli. Of this number 15, or 6.72 per cent., produced tuberculosis in experimental animals. Milk from 104 dairies was also examined by Anderson, the milk from each dairy being examined separately. The experimental ani-

imals injected with milk from two of the dairies died with acute disease before tuberculosis could develop. The milk from eleven of the other 102 dairies was found to contain virulent tubercle bacilli. These figures should not be understood as indicating exactly the frequency of tubercle bacilli in milk. In these experiments it sometimes happens that when two animals are inoculated with the same sample of milk one develops tuberculosis and the other does not, showing that the bacilli are not evenly distributed. The virulence of infected milk is also affected by the amount of non-virulent milk with which it may be mixed. Gebhart,<sup>7</sup> for example, found that milk that would infect guinea pigs with tuberculosis when injected undiluted, or when diluted with 20 parts of non-virulent milk, would not set up the disease when 50 parts of non-virulent milk were added to one part of the virulent milk. The results obtained by him should not be considered as final, however, as each dilution of milk was tested on only one experimental animal.

Aside from its hygienic influence in the production of milk, tuberculosis is also of great economic importance. Almost every animal that is afflicted with tuberculosis is killed by the disease sooner or later. Usually death does not occur for months or years after the animal is infected, and this characteristic of the disease, together with the peculiarity that it may exist in a herd for some time and make considerable progress before its presence is suspected, is responsible for the failure to realize its real nature in many cases. If the disease killed quickly its distinctive character would be more generally recognized and the loss it causes would be much reduced. The value of the animals it destroys is only one item of loss. In many cases, cattle are afflicted with tuberculosis a long time before they are known to be diseased and for a part of this time at least feed is necessary not only to maintain the body against the normal wear and tear, and to produce milk, but also to overcome as much as possible the additional wear and tear due to the ravages of the disease. How much additional feed may be required for the latter purpose cannot be stated, but whatever the amount it is a total loss.

In many cases where account has been taken of the amount of feed given to a cow and the milk received has been weighed it has been found that the cow was not paying for its keep, much less making a profit for the owner. In localities where what are known as cow testing associations are in operation, entire herds have been found where the value of milk received was not sufficient to pay for the feed consumed. While in many such cases the character of the cows, the kind of feed given, or the method of milking or caring for the cows has suggested a reason for the result, the probability of the presence of tuberculosis and its influence upon the productiveness of the cows must also be given consideration. A very common complaint from owners of tuberculous cows is: "The yield of milk does not correspond to the cost of keep," or "They eat well, but the feed does not seem to do them any good and they are falling off in milk." These statements are quotations from letters recently received from two owners of dairy herds. Decrease of the milk flow, in spite of generous feeding, is often one of the first effects of the disease noticed by the owner.

When a herd is extensively infected with tuberculosis there are nearly always some cows that stop breeding and become "chronic bullers." These not only cause considerable annoyance, but are also fed at a loss.

Cows in which the disease is advanced may abort their calves, or if the calves are carried the full term and born alive they are likely to be weak and unprofitable. Tuberculosis in a herd also limits the market for young stock. Tuberculosis in cattle is a disease that is widespread, and it should receive the careful consideration of every dairyman and cattle owner. It is not a subject of interest only to the individual owners of infected herds. Every tuberculous cow that is sold or is sent to market influences in a measure the general market value of cattle. If a dairyman buying fresh cows finds that a certain number are likely to develop the disease, he must take these losses into consideration in fixing the purchase price, or by subject to the tuberculin test, or he cannot continue in business. If the packer has a certain per-

centage of animals condemned on account of disease the loss sustained must be taken off the market price of the live animals or attached to the selling price of the meat and other products.

The cattle in the older countries of Europe are more extensively diseased than in the United States. According to Bang<sup>1</sup> one-half to three-fourths of the herds in Denmark are infected. McFadyean<sup>9</sup> estimates that 20 per cent. of the cattle in England are tuberculous, an opinion which is confirmed by the fact that 33 per cent. of the cattle examined in Great Britain in one year for importation to the United States were found to be affected with the disease. In Germany tuberculosis is quite as prevalent. While the disease is less extensive in this country, it appears to be gradually increasing. This is shown by the records of the post-mortem examinations made by the veterinary inspectors of the U. S. Bureau of Animal Industry of animals slaughtered in the abattoirs under government inspection. While the number of cattle examined in 1908<sup>10</sup> was less than double the number examined in 1908<sup>11</sup>, nearly six times as many carcasses were condemned for tuberculosis in 1908 as in 1900. The increase of tuberculosis in hogs is even greater. The increase in the number of hogs examined in 1908 over 1900 was a trifle in excess of one-third, while the number of carcasses condemned on account of tuberculosis was seventeen times greater in 1908 than in 1900. These figures do not take into account those animals in which the disease was so localized or limited that only a part was condemned; if these were included even greater increases would be shown.

A very large number of these cattle and hogs came from the Central Western states; another portion from the West and Southwest, and only a small number from east and south of the Ohio river. In the Central Western states it is a common practice to keep hogs with the cattle in order that the hogs may eat the grain which passes through the cattle undigested. Much skim milk is also fed to hogs. Therefore, for this section the amount of tuberculosis infection in hogs is an index to the degree of infection in cattle. Ten years ago men prominent in

agricultural lines were denouncing the tuberculin test and ridiculing the idea that tuberculosis could become prevalent in this section. It would be interesting to know to just what extent these teachings are responsible for the present conditions.

Much was made of the fact in those days that the cattle lived more in the open air in the Central West than they did in the more eastern and more thickly settled sections of the country and were, therefore, in no danger from tuberculosis. The same statement is often made with regard to tuberculosis in cattle in South Carolina and in the South in general. There is no very extensive data on record relating to tuberculosis in cattle in South Carolina. The only records available are those on file in the State Veterinarian's office at Clemson College, and these only cover 168 cattle in five dairy herds which have been tested with tuberculin since 1906. Of these cattle only 4, or 2.3 per cent., were found to be diseased. These figures are much too meagre, however, to be accepted as an index to the extent of tuberculosis among the 140,000 dairy cattle and the 370,000 other cattle in this state. But it is important to note that previous to the tests there was no reason to believe that any of the herds tested with tuberculin were infected with the disease. The herds were tested merely to obtain accurate information regarding their condition. There is no reason to believe, however, that tuberculosis exists to any great degree among the cattle in this state. Here, the principal danger seems to be from without. The important question is not how much tuberculosis exists in the state, but to what degree does the disease exist in the herds in other states from which cattle may be imported.

Following the lead of Massachusetts, New Hampshire, Vermont and Pennsylvania, a number of states have endeavored to prevent the introduction of cattle afflicted with tuberculosis from other states by passing laws requiring all cattle imported for dairy or breeding purposes to pass an inspection and tuberculin test. Thirteen states now have such laws, and it is only reasonable to suppose that cattle which cannot be shipped into these states are sent into those states which do not have such a law. The

law in Pennsylvania, which I mention because I am most familiar with it, has been in operation since 1889. A few recent occurrences that I can recall to mind will show how such a law operates to keep out tuberculous animals. In one lot of 25 cattle, which were to be shipped into Pennsylvania from another state, 12 reacted to the tuberculin test. In another lot of 5 all five reacted. Seven out of 26 reacted in a third lot, and ten out of 21 in a fourth lot. None of these cattle showed any external signs of the disease.

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A USEFUL method of testing a horse's working capacity has apparently been discovered by a German scientist, Dr. K. L. von Lutzow, as a result of numerous experiments. Using draft horses weighing 1,800 to 1,900 pounds he found the great variation in their ability to retain their weight at hard, steady work was closely associated with the behavior of the heart. After a day's work the pulse of a horse which lost weight rapidly required sometimes as much as 3½ hours to become normal. In horses that either held their weight well or gained during periods of hard work the quickened pulse soon decreased to normal rapidity when the day's work was done, requiring in some cases no more than thirty minutes to subside. So far his tests bear out the principle that in a horse of good staying powers the heart quickly reduces the rapidity of its beats when the animal rests after several hours of hard work. It is a test which horsemen can easily apply. A little experimentation with it will furnish some useful information regarding its accuracy and the possibilities of its application in detecting counterfeits. The theory has a logical basis for its support as well as the backing of experiments by a careful German scientist.—(*Breeder's Gazette*, July 28, 1909.)

## SERUM IMMUNIZATION AS A PREVENTIVE FOR HOG CHOLERA.

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The rapid advances made in the study of immunity during the past few years renders it essential that we consider a few of the basic principles upon which the serum immunization against hog cholera rests before considering the serum treatment proper.

Immunity is that condition in which an individual or a species of animals exhibit unusual or complete resistance to an infection for which other individuals or species show a greater or less degree of susceptibility. Consequently it is only in connection with infectious diseases that we consider immunity. Immunity may be of various types. For example, we have acquired immunity, when an attack of a certain infectious disease brings about a change which renders the individual immune to further attacks of the same disease. We have natural immunity, when individuals or species possess an inherent quality which prevents them from contracting the disease to which other individuals or species are susceptible. This immunity is not brought about by any condition which occurs subsequent to birth. We have anti-bacterial rather than antitoxic immunity in such diseases where the poisons are not secreted in a soluble or diffusible form by the living cell. In these we have what are known as endo-toxins. However, such diseases may be accompanied by pronounced toxic symptoms.

In other diseases of which diphtheria and tetanus are examples, the serum neutralizes the toxins, but does not necessarily injure the organism itself. The distinction between anti-bacterial and anti-toxic immunity is an important one.

Active immunity, which is also usually of a more or less lasting nature, results from infection or intoxication and depends



upon a specific reaction on the part of the tissue cells in response to the chemical injury produced by the bacteria or their toxins.

When an immune serum is injected a passive immunity is obtained, because it depends upon the introduction of immune bodies rather than their production through an active process on the part of the one injected.

**ANTITOXIC IMMUNITY.**—The combination of toxin and antitoxin is direct and follows the laws of chemical combination. The toxin is composed of two groups, a haptophore or combining group, the other is the toxophore or poisoning group. The haptophore or combining group is quite stable, while the toxophore group is destroyed at 55 degrees C. or decomposes on standing. This, however, does not prevent the haptophore group from uniting with a suitable antitoxin. It is only when the haptophore group happens to fit to one of the side chains or receptors of the body cell that the toxin can act. If this combination is effected, the toxophore group acts on the cell and injures it. As a result of this injury the receptors are given off in excess and thrust into the circulation. These free receptors constitute the antitoxin. If a toxin now enters the body similar to the one which leads to the production of the antitoxin the haptophore group of the toxin will be satisfied by the antitoxin and prevent the poison from damaging the cells.

Large doses of toxin are administered in the production of antitoxic serum, the object being the union of the toxin with the receptors of many cells. The antitoxins are much more stable than the toxins.

**BACTERICIDAL IMMUNITY.**—In this, two constituents of the specific serum are concerned in its destructive powers instead of one as in antitoxic immunity. One of these is able to withstand heating to 55 degrees C. and is contained only in the specific serum. The other is destroyed by heating to 55 degrees C. and is contained in the serum of normal untreated animals as well as in the specific bactericidal serum. For this reason if bactericidal serum is rendered inactive by being warmed to 55 degrees C. it may be reactivated by adding serum from a normal untreated

animal. The less stable constituent of bactericidal serum, which is also found in normal serum, is known as Alexin or complement. The other, which is stable and found only in the specific serum is termed substance sensibilisatrice, immune body or amboceptor. The destruction of bacteria, therefore, requires the substance sensibilisatrice of the specific serum and the Alexin which exists in normal as well as specific serum. The ferment-like action or digestive powers of the Alexin or complement cannot injure the bacterial cell until the cell has been rendered susceptible to the action of the Alexin or complement by the substance sensibilisatrice of amboceptor. The Alexin or complement which possesses the digestive powers decomposes on warming or spontaneously on standing and does not exist in immune serum if this is not perfectly fresh. This explains why bacteria are not dissolved by bactericidal serum after it has stood for some time; also why it may be reactivated by adding a little fresh normal serum or by injecting into the living animal. It also explains why a serum may be inactive in test tube experiments and intensely active in the living body in which it finds the Alexin or complement necessary for its action.

The immune body, or amboceptor, possesses two binding groups; one which attaches to the bacterial cell, and the other to the Alexin of the normal serum, and it is only through the immune body that the Alexin can effect the bacterial cell. From the preceding it follows that the stable, immune body, substance sensibilisatrice, or amboceptor, is the exclusive factor in the specific action of bactericidal serum. It possesses a combining group which is specific for the cells with which the animal has been treated. In other words the widely distributed complement found in the normal serum is concentrated on the bacterial cell by the immune body.

Specific bactericidal sera and normal sera differ in that the specific sera contain immune bodies which are specific for certain bacterial cells and through the medium of which the Alexins or complements in all normal sera are enabled to cause their solution. It is necessary, therefore, that the haptophore group of

the immune body fit exactly to certain receptors or side chains of the bacterial cell.

A great variety of inter-bodies are found in small amounts in normal serum and in addition a considerable amount of complements. In immune serum on the other hand, an enormous increase in the amount of a specific inter-body occurs, which constitutes the immune bodies, or amboceptors. In bactericidal immune serum, this specific increase is sometimes as much as 100,000 of that of normal serum. The complement is not increased by the immunizing process.

Only one of the necessary constituents, therefore, is supplied by the injection of an immune serum, and that is the immune body. The other necessary body or complement is found in the organism to be treated.

**PRACTICAL VALUE OF INJECTIONS OF BACTERICIDAL SERA.**—Practically the use of specific anti-bacterial sera has been tried on a large scale in man, and to a considerable extent in animals. Very virulent bacteria can be injected into susceptible animals without danger, if small doses of their respective anti-serums are given before the bacteria have increased to any great extent in the body. If given later, the sera are ineffective. Bactericidal sera, therefore, enable us to immunize against an infection and in some cases stop one just commencing, but we cannot cure an infection which is already fully developed. Observations in practice indicate that bactericidal sera have not given evidence of great value in already developed disease.

**APPLICATION OF THESE PRINCIPLES TO SERUM TREATMENT OF HOG CHOLERA.**—We cannot expect to get favorable results from the use of a serum or vaccine in diseases, a natural attack of which does not render the animal immune. Inasmuch as hogs which have passed through an outbreak of hog cholera are immune, it is reasonable to suppose that a serum could be produced which would render the animal passively immune, and such, in fact has been found to be the case. When a hog recovers from an attack of hog cholera we speak of naturally acquired active immunity. When treated with serum, a hog ac-

quires artificial passive immunity. When treated with the serum simultaneous method a hog has artificially acquired active immunity. Naturally acquired immunity is always active inasmuch as we have seen that the cells of the body must take an active part in overcoming an infection. Whether immunity from hog cholera is antitoxic or anti-bacterial we are not absolutely certain. It is suspected, however, that it is anti-bacterial. If this be true we would expect the following, which is in harmony with practical experience. When a hog recovers from infection with the hog cholera virus, he has developed during his recovery a large number of amboceptors or immune bodies. If he is now treated with a large quantity of virulent blood the cells of the body would be stimulated to increased production of these bodies, which would consequently be found in large quantities in the blood. The complement would not be increased. If the serum is now removed from the animal the complements soon decompose on account of their unstable character, but the immune bodies, being quite stable, would remain in the serum for a long time unless subjected to very high temperatures or other deleterious influences. If this serum is now injected into a hog which has had no infection, the immune bodies would, in the processes of metabolism, be eliminated within a few weeks or months. If the hog became infected at the time by artificial inoculation or natural infection, the immune bodies would unite with the receptors of the virus and through the medium of these immune bodies the Alexin or complement, which is found in all normal sera, would destroy the virus. If the hog had become infected some time previous and the virus was present in considerable quantities the amboceptors or immune bodies, which would be contained in an ordinary practical dose of serum would be insufficient to prepare all of the virus for the action of the complements. Consequently, the injection of ordinary doses of the serum would have very little, if any, appreciable effect upon the course of the disease.

If the serum is of low potency, that is, contains but few immune bodies and the blood is very virulent in the simultaneous

method, we would expect unfavorable results, which should be avoided. From the above, we may conclude that the serum alone is indicated in outbreaks and in these only the apparently healthy hogs should be treated, because hogs which have begun to show symptoms of hog cholera have the virus in their bodies in such large quantities that the immune serum would be practically useless. The infection, which would be obtained in outbreaks would be sufficient to produce active immunity even if the animal had been treated with the immune serum. The serum simultaneous method, it is readily apparent, would not be indicated where the opportunities for infection in the natural way were sufficient. Until we can determine with a considerable degree of accuracy the virulence of the blood the immunizing properties of the serum and the resistance of the animal, it does not appear to the writer that the serum simultaneous method should be recommended for general use by inexperienced persons.

**CONCLUSION.**—Immune hogs treated with large quantities of virulent blood produce a serum which will render susceptible hogs either actively or passively immune, depending upon whether it is accompanied by infection.

The serum should be used before the animal shows any indication of disease; that is, before the virus has increased to any considerable quantity in the body.

The serum treatment should be accompanied by infection in order to produce an active immunity. Consequently the chief indication for the use of the serum alone is on apparently well animals in infected herds. The serum simultaneous method is indicated in healthy herds in danger.

It is useless to attempt treatment of animals already showing symptoms of the disease unless very large quantities of serum are used.

That inasmuch as immunity is always specific, only the virus which is now known to be the actual cause of hog cholera can be used in the production of a successful immune serum for hog cholera.

## ECHINACEA ANGUSTIFOLIA IN THE TREATMENT OF INFLUENZA.

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I have been using echinacea for the past twelve years, in the treatment of Influenza, and the results in all cases have been satisfactory, and in some almost bordering on the miraculous.

Physiological action as given in Dr. Finley Ellingwood's *Materia Medica and Therapeutics* are, when a half teaspoonful of the tincture is taken into the mouth, a pungent warmth is at once experienced which increases to a tingling, and remains for half an hour after the agent is ejected. It is similar to that of aconite, but not so much solely of the nerve-end organs. The sensation is partly of nerve tingling, and more from an apparent mild nerve irritant effect. It much more resembles the action of xanthoxylum. If a small quantity be swallowed undiluted, it produces an apparent constriction of the throat, sensation of irritation and strangulation, much greater in some patients than in others and always disagreeable. The sensation persists for some minutes, notwithstanding the throat is gargled, water is drunk, and the agent is entirely removed. It promotes the flow of saliva in an active manner, the warmth and tingling extend down the esophagus to the stomach, but no further unpleasant influence is observed. In a short time diaphoresis is observed, and the continuation of the remedy stimulates the kidneys to increased action. All of the glandular organs seem to feel the stimulating influence, and their functional activity is increased. The stomach is improved in its function, the appetite increases, the food is more perfectly digested, the bowels operate better, and absorption, assimilation, and general nutrition are materially improved. It encourages secretion and excretion, preventing further auto-intoxication, and quickly correcting the influence in the system of any that has occurred. It stimulates retrograde

metabolism, or tissue waste more markedly than any other single remedy known. It influences the entire lymphatic system, and the condition of the blood suggests that the patient has been taking stimulants, liver and iron remedies in abundance. Sallow, pallid, and dingy conditions of the skin of the face quickly disappear, and the rosy hue of health is apparent. Anemic conditions improve, with increased nerve tone. There are but few subjective symptoms from large doses of this agent. It is apparently non-toxic, and to any unpleasant extent non-irritant. The agent certainly has a most marked effect upon the nervous system, but its specific influence upon the central organs has not yet been determined.

**SPECIFIC SYMPTOMATOLOGY.**—It is the remedy for *blood poisoning*, if there is one in the *Materia Medica*. Its field covers acute autoinfection, slow progressive blood taint, faults of the blood from imperfect elimination of all possible character, and from the development of diseased germs within the blood. It acts equally well, whether the profound influence is exerted upon the nervous system, as in puerperal sepsis, and uræmia, whether there is prostration and exhaustion, as in pernicious malarial and septic fevers, or whether its influence is shown by anæmia, glandular ulceration or skin disease.

It is especially indicated where there is a tendency to gangrenous states and sloughing of the soft tissues, in all cases where there are sepsis and zymosis.

I have experimented with it to determine its immediate influence upon the fever caused by continued absorption of septic material such as *catarrhal fever*, *puerperal fever*, etc., which show that its destructive influence upon the pernicious germs begins at once.

I have used it in several cases where special sedatives were not given, the temperature has declined from one-half to two degrees within a few hours after its use was begun, and has not increased until the agent was discontinued. It has then slowly increased towards the previous high point until the remedy was again given, when a decline was soon apparent. It does not

produce abrupt drops in temperature as often follows the curetting of a septic womb, or as the removal of a quantity of septic material causes, but it effects an almost immediate stop to germ development, and a steady restoration from its pernicious influence.

In the treatment of influenza, or so-called shipping fever in horses, when given in the initial stage the fever has disappeared in three days, and five days is the extreme limit. While my greatest experience with echinacea, has been in the treatment of influenza in horses, have used it with good results in the treatment of azaturia, septic metritis, and uræmia. It is a most important remedy in *uraemic poisoning*, and I believe in time will supersede all other single remedies. However it will be necessary to use a preparation that is pure and of a standard strength.

I have always been partial to Lloyd Bro.'s Specific Tincture, find it a very reliable preparation free from sediment and always can be depended upon, but of late years have been using Parke Davis fluid extract and find it perfectly reliable. In the treatment of influenza I begin as soon as I am sure of my diagnosis, by giving from two to four drachms of fl. ex. echinacea every two hours for 24 hours, then discontinue the echinacea, for six hours; if the temperature begins to go up again at the end of six hours, I then begin and give the echinacea every two hours for 18 hours, in most cases the temperature will not rise again after 48 hours. In case it does I repeat the remedy and rarely ever fail to reduce the temperature to 102 Fahrenheit by the third day to go up no more. In some very obstinate cases I have given 4 drachm doses every hour for 24 consecutive hours; as the remedy is non-toxic it can be pushed till you get the full physiological effects without any danger to the patient. The only thing, when used in very large doses, there will be retching of the throat muscles something similar to aconite, but this passes off in a few seconds. This is about all the medicine that I give in a case of influenza, unless there is yellowness of the visible mucous membranes showing the liver to be affected, then I give at the outset a capsule of resin podophyllin twenty grains, lep-



tandrin four drams, powdered ginger one dram, to be repeated again in 24 hours if bowels fail to act; if complicated with pneumonia and left with a cough after the fever is reduced, I give a powder every 12 hours composed of powdered ginger, capsicum, lobelia, symplicorpus foetidus, and asclepias tuberosa, but I find when you cut the fever short without reducing the vitality, as can be done with the diligent use of echinacea, there is generally not much need of tonics, as there is no anorexia, and the digestive function of the stomach is improved by the use of the echinacea, the animal begins to improve and gain strength from the time the fever is gone.

I do not claim this agent to be an entire specific in all cases of influenza, such as have been whipped and driven after the disease has come on, but if not too badly jaded before the treatment is begun, I do feel confident that 95 per cent. can be cured by the vigorous use of echinacea; as I have repeatedly brought the temperature down from  $104\frac{1}{2}$  to  $102$  in 24 hours, and by keeping up the use of the drug for from three to five days, according to the severity of the case, the temperature has remained at  $102$  or below, and the animal making a good recovery, with no after treatment only the use of a good laxative diet, and the animal being able to go to work in the course of ten to fourteen days; when under the old line of treatment, with aconite, belladonna, quinine, carbonate of ammonia, and the coal tar preparations have had them run on in an emaciated condition, for from four to eight weeks before being able to return to work, and then probably result in roaring, thick wind, or purpura hemorrhagica; and either carrying the horse off, or his being of no value for life. I have never had a case that was treated with echinacea, in which there was any sequelæ such as thick wind, purpura-hemorrhagica, etc., and for my part as long as echinacea continues to give such results in the future as it has in the past. I expect to continue to use it in all zymotic diseases or diseases due to auto-infection.

## TETANUS.\*

By I. L. SALLEY, D. V. S., SKOHEGAN, ME.

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Mr President and members of this association: When I agreed to read a paper at this meeting, I was hardly aware of the time and work it would require in order to present something worth your time and attention.

It was also somewhat difficult for me to select a subject; not because of lack of material, for we all know that there are plenty of diseases in veterinary medicine, but to select something which I could treat with sufficient brevity and at the same time bring up something of interest to you.

I finally decided to write upon Tetanus, partly because I have never seen a paper upon this subject, and partly because of the experience I have had with this disease. I shall not attempt to go much into details, for that would require too long a paper, but I will try and give you some of the most important points and something of the advancement in the pathology and treatment of this most important disease.

HISTORY.—Tetanus is one of the oldest as well as one of the most painful and fatal diseases we have in the domestic animals. All kinds of theories have been advanced for the cause of this disease, such as cold and dampness, inclosure of a nerve in the cicatrix, worms in the stomach, uterine irritation following abortion, and by some it was thought to be a blood disease; but in 1858 Dr. Greswell said, "There is no evidence that it is ever contagious."

ETIOLOGY AND PATHOLOGY.—Recent experiments have satisfactorily proven that tetanus is a germ disease and produced by the inoculation of this germ within the tissues. Nicolaier was the first to discover and describe the germ. He says it appears usually in the form of a long bacillus, one extremity of which

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\*Read before the Maine Veterinary Medical Association, January 13, 1909.

bears a colored swelling and later a brilliant spore, of a diameter which is two to four times larger than the body of the bacillus itself.

Bonome was the first to find the specific bacillus in tetanic animals. The transmissibility of tetanus to animals of different species and to man was demonstrated experimentally in 1884 by Carle and Rottone. Attempts at inoculation made previously, especially in the horse, by transfusion of blood, had been unsuccessful.

Carle and Rottone have transmitted tetanus to rabbits by inoculating pus from a tetanic human subject. A short time afterwards, Giordano communicated it to the guinea pig and the mouse by injecting pus taken from wounds made by the castration of horses and which were affected by tetanus.

This author has also established the fact that the blood of tetanic animals is not virulent, and hence the negative results by transfusion.

Beumer has recognized that inoculation is only successful upon fresh wounds. The tetanic bacillus possesses an extreme resistance, but must be kept from oxygen in order to thrive.

Within the last few years, researches upon tetanus have given important results. Toledo and Veillon have succeeded in obtaining in a pure state the bacillus of Nicolaier by cultivating in a suitable media, viz., Gelatine Blood-serum, etc., and protecting from oxygen, they have seen the development of small mobile bacilli which are elongated in undulated filaments, and after the tenth day show a sporulated form which is drum-stick or bell-hammer shaped.

At this stage they possess the most resistance. They are not destroyed by a temperature of 90° C. for fifteen minutes, by a five per cent. phenicated solution for ten hours or a one per cent. sublimate solution for three hours.

When inoculated the bacilli remain in the tissue surrounding the wound. Vaillard and Vincent have recognized that pure cultures of tetanic bacilli act only by the toxine which they contain.

The microbe not only does not become multiplied in the tissues

where it is deposited, but it disappears rapidly and does not produce disease if the toxine is removed before inoculating. It can only prove effective when acting with certain chemical substances, viz., lactic acid, or with certain common microbes (hyogenic microbes).

If inoculated alone it is rapidly encysted and destroyed by phagocytes, but if it is associated with other micro-organisms, the latter attract the phagocytes and allow the tetanus bacilli to develop.

Under its influence organic albumins undergo a series of transformations and generate ptomains which possess properties similar to those of strychnine.

Of these alkaloids, Brieger has isolated tetanine, tetanotoxine, spasmotoxine and another which he has called taxalbumine—its composition appears to be that of albuminoid matters.

Vaillard and Vincent look upon it as a diastosis which is clearly comparable to toxine which is secreted by a diphtheric bacillus and the effects of which are limited to the neuro-muscular system.

ANIMALS AFFECTED.—Although all domestic animals may have tetanus and although it used to be quite common, at the present time with the asepsis practiced in surgery and upon wounds, tetanus is rarely seen.

FORMS OF TETANUS.—Three forms of tetanus have generally been recognized: the traumatic, rheumatismal, and toxic. It is safe to say with our present knowledge of tetanus that the first-named is the only true one, and the two latter are only myths and should be forgotten.

SYMPTOMS OF TETANUS IN GENERAL.—The symptoms are that which would follow tonic spasms of any and sometimes all of the different sets of voluntary muscles of the entire system; we have the arched tail, closing of the jaws, or trismus and stiffness of the head, neck, shoulders, limbs, etc.

But a symptom that is almost always present is the contraction of the great posterior muscles of the eye, causing retraction of this organ within the orbit and a protrusion of the mem-

brana nictitans upon the eyeballs when the nose is elevated; this is a symptom which I have always seen in all cases in the first stages, and never in any other disease.

TREATMENT.—Various treatments have been used, mostly in the form of narcotics, such as chloral, morphine, inhalations of chloroform, rectal injections of ether, belladonna, nicotine, aconite, calabar bean, etc. I believe all these remedies are useless in themselves alone, and simply tend to ease pain, and perhaps prolong life a little, with no chance of a cure. The only treatment for lockjaw that I have any faith in is the use of the antitetanic serum or the tetanus anti-toxines.

During the last twelve years I have treated with anti-toxine fifteen cases and have saved ten, five having died with the best of treatment I could give them. I will not go into detail with all these cases, but will describe two or three of the more important ones.

Case No. 1.—Sorrel horse 12 years old, weight 1,200 pounds. Calked while harrowing some two weeks previous. When I was called the symptoms of tetanus were well advanced and trismus was complete. I began the anti-toxine treatment and after using six doses, it recovered sufficiently to feed grass from the ground. At this time I got out of anti-toxine and before I could obtain it from New York the animal was dead. Had I sufficient anti-toxine I have no doubt this would have been one of the cases of recovery.

Case No. 2.—Gray mare, age 8, weight 1,100 pounds. Some three weeks previous had been cut in foot while threshing, and had been treated by a quack; when called a well-developed case of tetanus was found. I used the anti-toxin and after nearly complete recovery I removed quite a piece of wood from the foot.

Several other cases could be related, but would add nothing of especial value to the above reports.

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DR. F. A. NIEF, of Seattle, has been appointed official veterinarian for the Live Stock Show to be held in connection with the A.-Y.-P. Exposition.

## REPORTS OF CASES.

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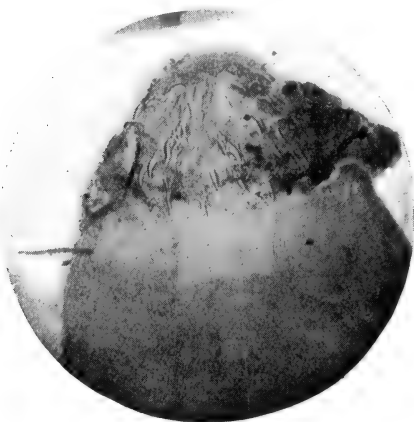
*"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."*

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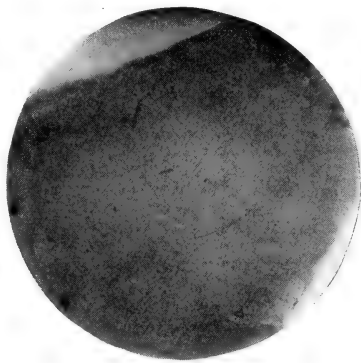
### ECHINORHYNCHUS CANIS.

By J. W. PARKER, D. V. S., El Paso, Texas.

Supplementing the article by Dr. B. F. Kaupp, in May issue of the VETERINARY REVIEW, in which he gives a technical description of a parasite sent him by me, in 1902, and suggests the name *Echinorhynchus canis*: Specimens were also sent to the U. S. Department of Agriculture, and to others, none of whom



*Echinorhynchus Canis*.  
4 M. M. Obj.—1' Ocular.  
Head of female—retracted.

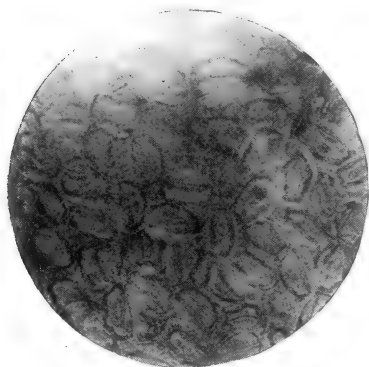


Neck (retracted) of female.  
*Echinorhynchus Canis*.  
4 M. M. Obj.—2' Ocular.

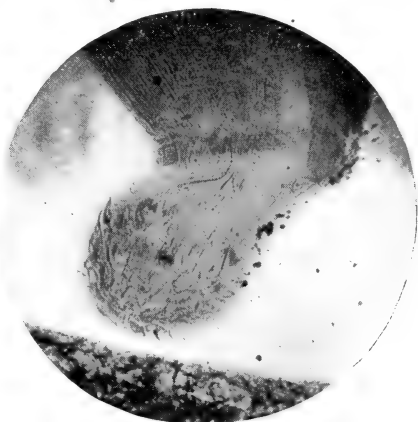
were able to identify the parasite with any classified species. Aside from being apparently an unclassified species, the chief interest centers in the symptoms and pathology of the case.

In September, 1902, a pointer dog, about nine or ten months old, ran through the streets of San Antonio, Texas, biting other dogs and two children, who were bitten on the hand, face, and

groin. (The wounds of the children were treated by physicians, with carbolic acid, within an hour, neither developing rabies. No rabies among animals was reported in the newspapers within the two months following.) The dog was tied up by a policeman, and I was called. The symptoms were strongly indicative of rabies. Great exhaustion, altered voice, dropping of jaw, dribbling of saliva, tucked up abdomen, frenzy and vicious aggressiveness, muscular inco-ordination. The dog died after twenty-four hours, with continued frenzy and progressing par-



Eggs in body of female.  
*Echinorhynchus Canis*.  
Shells are shriveled from dehydration.  
4 M. M. Obj.—1" Ocular.



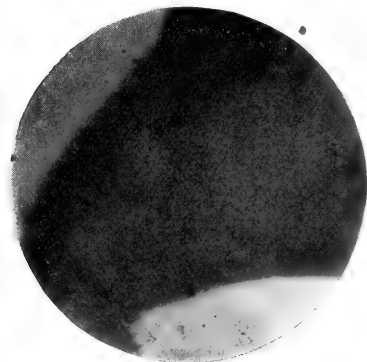
Head of male, protracted.  
*Echinorhynchus Canis*.  
4 M. M. Obj.—1" Ocular.  
(Brownie Kodak).

alysis, unable to eat or drink, during which time he tore up a rug and a burlap sack given him for bedding.

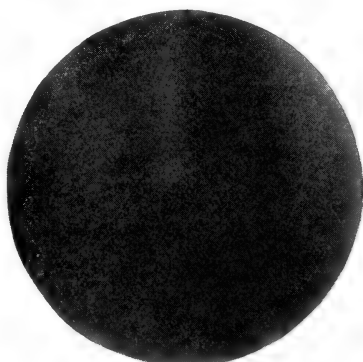
Numerous ulcerations, as from abrasions three or four days old, were found on the buccal and gingival membranes and tongue; some congestion of fauces; acute pulmonary congestion the immediate cause of death; brain normal microscopically; stomach empty except a little grass and dirt; other organs apparently normal except that about three hundred small worms (*Echinorhynchus canis*) were found in the jejunum and ileum, chiefly in the ileum, most of them attached, in some cases the head penetrating mucous and muscular coats to the peritoneum. Some of the worms were detached, and corresponding ulcerations were found. The worms are about half an inch long, males shorter and slenderer than females; color whitish; skin transversely wrinkled, producing appearance of segmentation;

the head is protractile; body cylindrical, flattened and curved ventrally, tapering abruptly anteriorly, and gradually to a rounded posterior extremity, thickest about the anterior third.

Compressed specimens show that the body of the female is filled with uterus and eggs, none of which seem to be segmented; the body of the male seems to contain only testicle; in addition to numerous muscular fibers in each. No alimentary canal can be made out. In my specimens I make out five circles of six



Neck (protracted) of male.  
*Echinorhynchus Canis*.  
4 M. M. Obj.—2" Ocular.



Middle part of body of male.  
*Echinorhynchus Canis*.  
4 M. M. Obj.—2" Ocular.

hooklets in each circle, on the spherical head, the largest anteriorly, and the arrangement regularly alternating.

As the dog wore no license tag, it is probable that he came from the country. During the summer of 1902, I made post-mortem examinations of twelve or fourteen other dogs suspected of rabies, not finding this parasite in any other. "Mad" coyotes are frequently reported in the vicinity, much more frequently than rabies is reported among domestic animals. I, therefore, think it probable that *Echinorhynchus canis* is normally a parasite of the coyote.

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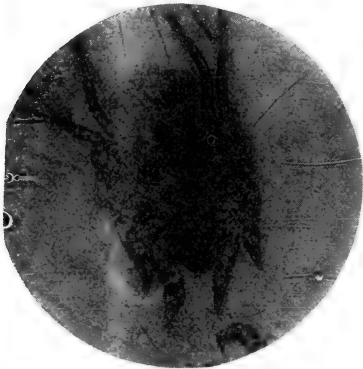
## CHORIOPTIC SCABIES OF ANGORAS.

By J. W. PARKER, D. V. S., El Paso, Texas.

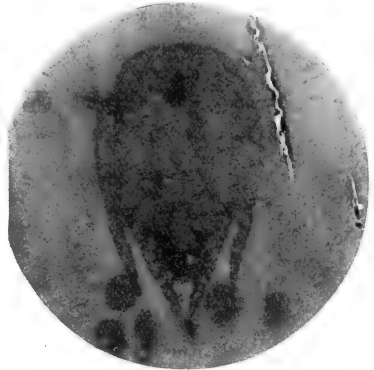
A female Angora, four or five years old, became scabby each summer, losing most of coat from back, rump, sides and abdomen. Examined in August, 1905, the disease was found to ex-



tend over two-thirds of the body, but coat not yet falling. The mohair was dry and harsh; the skin thickened and covered with a hard crust, the under part being moist; an exudate noticed at the spreading edge of the scab. Examination of scrapings with pocket lens disclosed an immense number of mites about half the



*Chorioptes Communis* (male)  
(from Angora goat).



*Chorioptes Communis* (female)  
from Angora goat).

size of *Psoroptes communis*. They were classified as *Chorioptes communis*. The goat had been with flock several years, but apparently the disease had not spread to others; no symptoms of the disease could be found on the six-months-old kid. Owner stated that the goat had been bought of a flock built up with South African importations. Chorioptic mites were also recovered from scrapings from an Angora buck said to have been from imported South African stock.

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### FOOT ROT IN SHEEP.

By R. H. McMULLEN, D. V. S., Force of Dr. W. E. Howe, B. A. I.,  
Denver, Colo.

In the presentation of this article no claim to originality is made, the chief purpose being to call attention to an outbreak of a disease which is rare in sections of the United States which enjoy a dry climate.

Incidentally the writer cares to state that at the outset of the outbreak his advices were disregarded, and instead, suggestions of laymen accepted, which fact resulted in a large mone-

tary loss by reason of the delay, but eventually realizing their predicament, the owners of the animals again sought the services of the writer, and the favorable termination of the outbreak resulted in some valuable "missionary work" for the qualified veterinarians in this section, as well as creating a more favorable impression for the workers of the B. A. I. in this immediate sheep-feeding territory.



HISTORY AS PRESENTED BY THE OWNERS.—A band of 1,100 sheep were shipped on or about March 1 last to Windsor, Colo., from Sugar City, Idaho. At the latter point, as was subsequently determined, they had been exposed to foot rot. About ten days after arrival at destination several of the animals showed lameness. This spread to such an extent that on the date upon which the writer was called, March 25, about one hundred animals exhibited evidences of foot rot, the symptoms of which are so familiar that it is unnecessary to dwell upon them at this time. A

course of rational, economical treatment was suggested, and immediate segregation of the non-infected animals was strongly urged.

It was at this point that the owners' error was committed, and "outside" advices listened to. No attempt was made at separating the animals, for laymen had ventured the opinion that the disease was due solely to muddy corrals.



One month later, April 25, when the writer was recalled, fully 900 animals were infected, and they manifested the disease in its various stages.

The writer was then given full sway, and as a consequence heroic treatment was begun in earnest. A framework was constructed, into which each diseased sheep was turned, its toes clipped, and the undermined portions of the horn removed. The animals were then placed daily in a foot bath composed of a saturated solution of Cupri. Sulphas.

Quicklime was at first spread about in the corrals, but it had the effect of hardening the horn, rendering paring difficult, so its use was discontinued.

It was found that pruning knives were the most serviceable for clipping the toes, and strong, sharp jack-knives answered very well for paring purposes.

Two weeks after treatment was begun, a cure was effected in 500 head, and they were allowed interstate movement. At the



expiration of three weeks more the remainder of the band had completely recovered, and they followed the others to market points. No mortality resulted.

The woodwork of the corrals was subsequently disinfected, the straw burned, and the infected ground plowed.

**DIFFERENTIAL DIAGNOSIS.**—Streptococcic infection of the feet; purulent inflammation of the interdigital space; foot-and-mouth disease.

Experimental inoculation produced the disease.

The *Bacillus necrophorus* was not demonstrated owing to lack of facilities.

## A KINK IN THE INTESTINES?

By WM. D. HOWATT, V. M. D., Port Chester, N. Y.

On May 10 I was called to see a five-year-old bay gelding that the stablemen said was injured that afternoon by being stuck with a heavy load, and they would insist that it was in the gluteal region of the right hind leg; they pointed out (as usual) imaginary swelling and tenderness upon pressure, and as I could see none of it they were all in favor of sending for some other veterinarian, but didn't.

I found a case of extreme abdominal pain, the animal very violent, covered with perspiration, heart very rapid and weak, the pulse being hard to feel and catch the number of pulsations, peristalsis null, and a slight tendency to flatulence. The animal would throw himself in a corner, get up, paw and go down, roll over, get upon its back, and in every way a very severe case.

I gave one ounce of fluid extract of *Cannabis Indica* and waited twenty minutes; no relief; repeated *Cannabis*, but only one-half ounce, and no relief. In the meantime the mouth, nose, and mucous membranes of eyes became very white; no coloring at all, and as the animal seemed to grow worse, told the foreman I thought it was internal injury with hæmorrhage, and that the animal was going to die.

I then decided to start the action of intestines and gave one grain of arecolin hydrobromate subcutaneously, and in about five minutes salivation started, the animal gave a very hard grunt and strained as if the bowels were to be emptied; then quieted; peristalsis started, and in a very few minutes was quiet; commenced to eat hay and the surface of the body to dry off.

I went back after supper and found him still eating and all right, but gave orders that he was to have a small amount of water and no grain. He was put to work the next morning and nothing has happened since. This horse has never had a form of colic, and always works hard since going to the present owner.

I decided that during the strain of trying to move the loaded truck that a partial kink of intestines took place and that the arecolin caused peristalsis to start, and removed the obstruction whatever it may have been. I have never known of a case where the mouth, nose and eyes became so white, and this case puzzled me, and would like to hear from others as to what they think about it.

I have used arecolin hydrobromate in a great number of cases of abdominal troubles, and I think it is one of the most valuable drugs we have, and I feel that it does away with dopeing and pain killers so much used, as in a great many cases of acute indigestion and flatulence. I never use anything else and have been very successful with these cases.

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### RECOVERY FROM A CASE OF TETANUS.

By W. D. HAMMOND, V. S., Blair, Nebraska.

On evening of March 28, 1909, I was called to Mr. C.'s farm, he telling me he had a case of blood poisoning. On my arrival, I found a fine Percheron mare, heavy in foal, and a bad case of tetanus; pulse 80, temperature 104° and breathing heavily. Owner explained that mare had picked up a nail a few days before. I at once dressed the wound with formaldehyde and put on a warm bran poultice, and gave hypodermically 30 c.c. P. D.'s tetanus serum. Went out again on morning of 29th, gave 30 c.c.; also in evening until April 3d and mare just holding her own, no better. On 3d I gave 45 c.c. and on 4th 45 c.c. each dose, morning and evening, and mare continued to improve. In addition I gave Fl. Ex. Cannabis Indica, Henbane and Gelsemium in two drachm doses each every two to three hours. Mare commenced to improve after second day's treatment of 45 c.c. tetanus serum, and on April 6 foaled a fine healthy colt, and mother and foal are doing well. I shall hereafter continue to give 45 c.c. or even 50 c.c. from first of tetanus serum in treatment of tetanus.

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### SHAFT THRUST PENETRATING PLURAL CAVITY.

By Dr. J. ATKINSON WILKINSON, Oxford, Pa.

On Wednesday, June second, I was called by Mr. George Coates, of Hopewell, about two miles distant, who said he had a horse which had run a shaft in its side, and although he did not think there was any hope for it, he would like to have me do all I could. On arriving he told me the horse had been quietly standing at a post hitched when it was suddenly frightened, and wheeling around to the left broke the left shaft and the point

ran into its side. We took the horse to the stable and placed him in a box stall, after I had examined him and found the injury to be as follows:

There was a hole running back and downward about six inches above the ulna and between the seventh and eighth ribs; on carefully disinfecting the outside and my hands, I explored the hole and removed a piece of bone broken from the back of the seventh rib and found the hole penetrated into the plural cavity, and my finger came in contact with the left lung.

I immediately removed my finger and closed the outer wound, leaving a slight opening for drainage, after which I placed a wet antiseptic pad over the wound and placed slings loosely under the horse to keep him from lying down and tearing the stitches. My treatment then consisted of daily washing antiseptically of the exterior of the wound and as far into the wound as I considered safe; and internally gentian, nux vom., quinine sulph. and alcohol, alternated with small quantities of phosphorus.

The horse's temperature never rose above 103° F., although there was some pleurisy present; and in a little over a week he was turned out to pasture; and, although very stiff and lame, managed to pick some grass.

At the present time he is doing fine. I would like to add that I gave him a full dose of 30 c.c. tetanus antitoxin on my first visit.

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## A FEW CASES TREATED WITH ANTIPERIOSTIN.

By Dr. J. E. ASSING, New York, N. Y.

Antiperiostin has proved itself a very valuable agent in my hands for the last six months, and I can truthfully say that in my opinion it is the best remedy for those cases of incipient periostitis in horses, which usually terminate in bone spavin or splint, and which when treated under the old line methods, such as firing and blistering have been more or less unsatisfactory.

The following three cases I take from my record:

Case I.—Bay draught mare, lame on near hind for one month, starts off lame on the walk, but gets better after a little while, always lame when trotted; examination reveals a small but well marked exostosis at the hock. DIAGNOSIS.—Bone Spavin. Antiperiostin was applied on Nov. 15; on the 17th there was

considerable swelling and straw colored exudate; this subsided in a few days and on Nov. 23 she was put to work when she was found to be free from lameness, except that she still rested on the toe when standing, but by Dec. 1 she was entirely sound on the trot and stood with the foot squarely on the ground. This case terminated most satisfactorily, as the mare was only laid up eight days.

Case II.—Brown gelding used for light business wagon, has been going lame on off hind over a month. Examination reveals a well-marked bone spavin. Antiperiostin was applied and after three days leg is quite swollen, even up above hock; the owner is alarmed at the swelling and notwithstanding my advice to the contrary the leg is washed off; however a thick, firmly adhering scab had already formed and was not removed by the washing. This horse was taken out in about ten days and there was a very decided improvement, but still there remained some slight lameness for two weeks, after which he went sound.

Case III.—Brown draught gelding, lame off fore; walks sound but trots very lame; examination discloses a small diffused swelling just below carpus at the internal metacarpal region, painful to pressure. DIAGNOSIS.—Periostitis—Incipient Splint. Applied Antiperiostin, and on the third day the leg above the knee showed considerable œdema, after eight days he was put to work and trotted sound.

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## AN ACCIDENT OF PARTURITION.

By Dr. J. ATKINSON WILKINSON, Oxford, Pa.

On June third I received a call from Mr. Harry Gifford, who lives about twelve miles from Oxford. He said he had a mare trying to give birth to a colt. On arriving I found the mare down and lying on her side with at least five feet of the large intestines protruding from the anus, and naturally greatly distended with gas and discolored, as the owner said she had been in that condition for at least two or three hours.

Mr. Gifford said that the mare had not been injured in any way, but that the intestines came out when she first seemed to have pain. The foal was in an anterior dorsal position with the left leg bent on itself.

Of course nothing could be done for her and she was put out of her misery.



## INTUSSUSCEPTION IN A NEW BORN FOAL.

By F. E. YORK, D. V. M., Brookfield, N. Y.

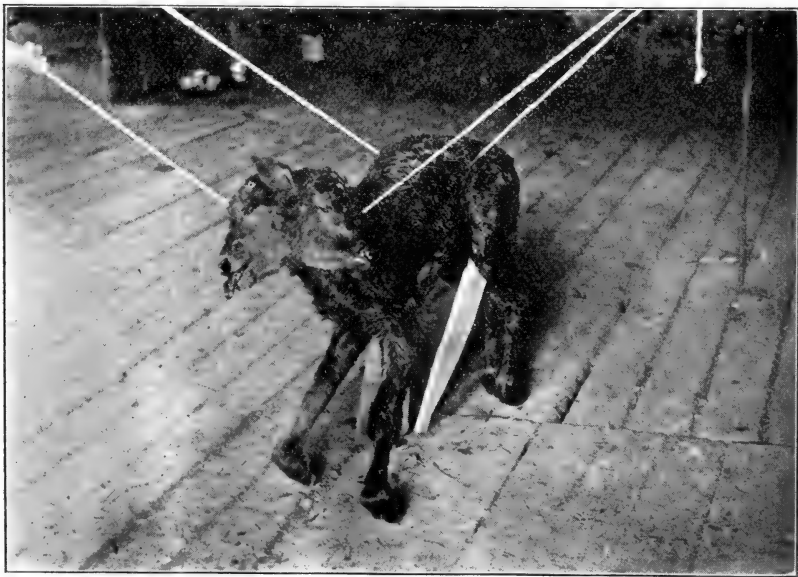
Was called early in the morning of June 6 to see a young colt about 24 hours old. The colt was found with its mother the morning before all right and strong; was active and playful during the day. On the morning of the 6th he was found sick; would not stand up much. When I arrived colt was dying.

POST MORTEM.—Found four invaginations in the small intestines, from one to five inches long. I would like to hear personally from any practitioner who has observed this trouble; as I have known many colts to die with the same symptoms.

## A TWO-HEADED CALF.

By O. H. TITTERUD, M. D. C., V. S., Preston, Minn.

This was a male calf, the body was of good size, the neck long and well formed. The two perfectly shaped skulls articu-



lated with but one atlas. It had four ears and four eyes. The palate of both heads were cleft; also the upper lip of the left head, deforming the right nostril, as shown in the picture.

## ARMY VETERINARY DEPARTMENT.

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### SENATE BILL 1692.

Dr. J. P. Turner, Washington, D. C., chairman Legislative Committee, A. V. A., has distributed among army veterinarians official copies of two bills "to increase the efficiency of the army veterinary service," introduced into the Sixty-first Congress, one marked "S. 1692," the other "H. R. 2735." Contrary to expectation, they are not identical bills. The House bill, introduced by Mr. Hull, is the old War Department bill in its original form, whereas the Senate bill, introduced by Mr. Warren, is a modified bill. The latter reads as follows:

61st Congress,  
1st Session.

S. 1692.

IN THE SENATE OF THE UNITED STATES.

April 15, 1909.

Mr. Warren introduced the following bill; which was read twice and referred to the Committee on Military Affairs.

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### A BILL

To increase the efficiency of the veterinary service of the army.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That hereafter the President shall have authority to appoint veterinarians in the army, not exceeding two for each regiment of cavalry, and one for each battalion of field artillery, and all veterinarians so appointed shall be on the same footing as that of commissioned officers of the army in respect to tenure of appointment, retirement, pensions, increase of pay, and subjection to the rules and articles for the government of the armies of the United States, but, except as hereinafter provided, no person shall be appointed a veterinarian in the army unless he is a citizen of the United States, unmarried, not under twenty-one nor over twenty-seven years of age, a graduate of a veterinary college of

good standing, and shall have passed satisfactorily an examination to be prescribed by the President : *Provided further*, That veterinarians now in the army who have served honorably and faithfully as such not less than fifteen years shall be the first persons eligible to appointment under the provisions of this Act and may be appointed without regard to any of the restrictions thereof, and if any such veterinarians now in service shall have reached the age of sixty-four years before the approval of this Act the President may appoint them veterinarians and immediately place them on the retired list with the retired pay of a first lieutenant, mounted: *Provided further*, That veterinarians now in the army who have served honorably and faithfully as such less than fifteen years shall be the next persons eligible for appointment under the provisions of this Act, and may be appointed without regard to any of the restrictions thereof except the restriction as to examination; but no subsequent examination shall be required for any veterinarian now in the army who shall be appointed under the provisions of this Act and who shall have served as such veterinarian for ten years or more at the date of his appointment, and any such veterinarian who shall have served honorably and faithfully as such for ten years or more at the date of his examination for appointment under the provisions of this Act, and shall be found on such examination to be disqualified for active service by reason of wounds or other disability incurred in service and in the line of duty, shall be placed on the retired list with the retired pay of a first lieutenant, mounted: *Provided further*, That of the veterinarians who shall be appointed under the provisions of this Act, those who are now veterinarians in the army and have served as such not less than ten years, and those who hereafter, on completing ten years of service as veterinarians in the army, shall pass a satisfactory examination to be prescribed by the President, shall have the pay and allowances of first lieutenants, mounted, and all other veterinarians on the active list of the army shall have the pay and allowances of second lieutenants, mounted: *Provided further*, That hereafter all veterinarians who shall be appointed under the provisions of this Act shall, in determining their status and rights under this Act or any other law, be entitled to credit for all honorable prior service rendered by them as veterinarians or veterinary surgeons in the army, and all veterinarians now in the army who shall not be appointed under the provisions of this Act shall be discharged by the Secretary of War with three months' pay.

COMMENT.—Careful inquiry into the provisions of this Senate bill shows that it differs from the House bill in two essential points; firstly, it comprises one larger section only, whereas the House bill contains nine sections; secondly, the Senate bill provides that veterinarians of over ten years of service, found disqualified by reason of physical disability incurred in service, shall be retired with the retired pay of first lieutenants, while the House bill does not provide so. It is supposed that this provision applies equally to veterinarians "who hereafter, on completing ten years of service," shall have to undergo the prescribed examination. No provision is made for the retirement of veterinarians who have less than ten years of service, neither is their re-examination demanded.

If the Senate bill should be enacted into law as it stands, the disposition of the present army veterinarians would be as follows:

To be retired with the retired pay of first lieutenants, mounted—Service, Tempany, Corcoran.

To be appointed, without examination, with the pay and allowances of first lieutenant, mounted—Griffin, Le May, McMurdo, Plummer, F. Foster, McDonald.

To be examined as having over ten years of service—Lusk, Schwarzkopf.

To be examined on completing ten years of service—

July 19, 1910: Nockalds, Stanclift, Grutzman, Glasson.

January 29, 1912: Hill, Jefferis, Peter Power, Steele, Uri.

April 15, 1912: Vans Agnew.

January 14, 1913: Lawrence.

July 22, 1913: Donovan, English, McKibbin, Peck.

Less than five years of service—R. J. Foster (1905), Hanvey (1905), Musser (1906), Stockes (1907), Mitchell (1908), Mason (1908), Williams (1908). Forty accounted for.

What the general feeling of the army veterinarians is as regards this bill is not difficult to surmise, as this has been strongly voiced for the last four years, and the provisions of the modified Senate bill do not materially differ from those of the original House bill.

We can rejoice with the three aged veterans who would be finally retired after an unprecedented long service; and we should congratulate the next six veterinarians who, heaven knows, have toiled hard under adverse conditions for fifteen years and several of them for over twenty years, now to be raised

to the pay and allowances of first lieutenants, without examination. As for the two to be examined first, of which I am one, I shall submit to another ordeal at examination, if it served no other end than to help to beat out for us the wretched discriminations that are now slowly eating up the hearts of the best of us, and in order to win "the same footing as that of commissioned officers," as the bill provides for.

With the younger veterinarians of less than ten years of service, all of us have the fullest sympathy. They have not long ago stepped into the military service with the enthusiasm of youth, confident of a secure position, now to find that it may be threatened by law. The older men think that their fears are groundless, that such a law may hit the best; we also deplore the threats of resignation from the army that have come to us from some, and sincerely hope that all will muster strength to stay in the army until their service shall count ten years and then bravely go up for the examination that shall better provide for them.

However all these fears and outbursts of feeling represent only the sentimental side of the question. It is a good thing that now almost all of us have come to understand the hard, naked facts so clearly shown by our recent experience in attempting to substitute a bill that carried with it rank and organization. It was quickly shown to be utopian. No one will try such a bill again in the near future unless he is a newcomer.

The result is that the Senate bill appears not so bad to even the most obstinate objector. It is realized now by most that the longer we obstruct the legislation proposed by the government, the better it suits unfriendly men and groups of men in the army, while at the same time it ties our hands and those of our friends in the army.

Naturally, some younger men state that the bill would meet the favor of all if it would read seven years instead of ten years, while still others say it should be amended to read five years instead of ten. But these same young men also state that the alterations suggested are personal desires that have now little show of success; that the more we shall interfere with the provisions of the bill, the less chance we have to see this or any other bill passed; and that if this bill fails to pass, it will be dished up to us again for ten years or more, so that we might just as well swallow it now than some years later.

The above constitutes a summary of the expressions given to me by quite a number of our younger men. There are not a few who are discouraged, and some are disgusted, but there is also a leaning towards favoring the Senate bill as the only means left to us to improve our status. No one has so far ventured to express any definite opinion or advise whether we shall actively work for the passage of the Senate bill, which, we were told, is the wish of the War Department.

OLAF SCHWARZKOPF.

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## CORRESPONDENCE.

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*Editors AMERICAN VETERINARY REVIEW, NEW YORK:*

The idea of an international veterinary emblem has occurred to me. The Red Cross is emblematic everywhere of sanitation and the human ministering to the sick; in fact an emblem of the human physician. Why not an emblem meaning Veterinary wherever it may be seen and used? It would seem advisable for a committee to be appointed at the forty-sixth annual meeting of the American Veterinary Medical Association for the purpose of receiving and soliciting and considering any and all designs that may be offered and then permitting a vote to be taken. It is suggested that some modification of the present Red Cross ✝ be adopted.

Dr. BURTON ROGERS,  
Manhattan, Kan.

August 11, 1909.

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UNDER date of August 11, Ottawa, we received information of the illness of Dr. Charles H. Higgins, of the Health of Animals branch of the Department of Agriculture, Canada. At that time the doctor's illness, in the form of a nervous strain, necessitated his laying aside all work. We hope to be able to report his restoration to health in the next issue of the REVIEW.

## ABSTRACTS FROM EXCHANGES.

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### ENGLISH REVIEW.

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By Prof. A. LIAUTARD, M. D., M. V.

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ON STRYCHNIAE [*Prof. E. Wallis Hoare, F. R. C. V. S.*].  
—Referring to the several cases of intoxication recently published, the writer says: that it seems to him that the doses advised in his work on “Veterinary Therapeutics” are too large and that greater care is necessary in prescribing it in full doses. He recalls that he has used it in two-grain doses with cows and frequently in grain doses for several days without any appreciable effects. Yet he is rather sceptical as to the real value of the drug in the treatment of the various forms of paralysis, and again there are plenty of instances of curable cases that recover without it. It is very probable that it often gets credit that it does not deserve. It would prove exceedingly useful if practitioners having experience with the use of strychnine would record their observations; for it is only by this means that it is possible to arrive at what may be regarded as a safe and effective dose. Authors have, after all, to depend on their own experience and however valuable the evidence of these may be, it cannot be compared with the practical observations of clinicians.  
—(*Veter. Record.*)

SQUAMOUS-CELLED CARCINOMA [*R. Paine, F. R. C. V. S.*].  
—A merino ewe had a small growth upon the forehead about one and a half inches high. It grew rapidly in cone shape and when the ewe was slaughtered it measured three inches in height and about nine in diameter at the base. Externally it is of horny nature and has some clear fluid at its base. Its presence did not seem to interfere in any way with the general health and condition of the animal, except that after the result of a kick she remained in a semi-comatose condition. The kick had produced a large hemorrhage. The frontal bone was extensively destroyed by the growth, which was in direct contact with the brain. Upon

microscopic examination the lesion proved to be a squamous-celled carcinoma.—(*Ibidem.*)

AN ATTACK OF MANIA IN A BITCH [*Horale L. Roberts, F. R. C. V. S.*].—Toy Yorkshire terrier bitch, very nervous, shows signs of œstrum. After a week she seems over it and is taken out for her usual morning walk. Out one hour she commenced to rush about in a frenzied manner, meanwhile emitting continuous yelps. No one can quiet her; far from it she exhibits most unusual ferocity. Injections of morphine and atropine calmed her and she laid down in a comatose condition for several hours. Caffeine is injected hypodermically. Late in the evening she has three epileptic seizures. Chloral is given. The attacks returned and then she received chloral, bromide of potassium and hyosciamine, in pills which were given two or three times during the next 24 hours. Being finally quieted she had a dose of castor oil and went home. She has had no recurrence of the trouble since.—(*Veter. Record.*)

AMPUTATION OF THE UTERUS IN A COW [*Thomas D. Taylor, M. R. C. V. Sd.*].—The cow had aborted and the best thing that remained to do after, considering the condition of the case, was to amputate. "I," says the author, "secured the cow in the usual way, but did not cast her; administered a full dose of chloral, removed the placenta, applied multiple ligatures to the uterus as far anterior to the os as possible. I then excised the mass about two inches behind my ligatures and applied the actual cautery to the stump; which I returned when all hemorrhage had ceased. She was firmly trussed and given eight ounces of whiskey. When she was taken to her box she collapsed and commenced to blow violently, continuing in that condition for about eight hours when she took a quart of a warm drink, which increased the blowing considerably. In twelve hours, an improvement was noticed, the blowing subsided in twenty-four hours, she then ate a little hay. The truss was removed on the fourth day. The temperature never exceeded 103° F. The slough came out in about three weeks." Complete recovery and cow is fattening.—(*Veter. News.*)

METRITIS IN A BITCH [*J. Craig, M. R. C. V. S.*].—The animal had been put to a dog once without result, two and half years ago. She had a slight bloody discharge from the vulva. She had vomiting, loss of appetite and shortly before her death, a



slight swelling of the abdomen with loss of control of the bowels. The lesions found at post mortem were confined to the uterus. The horns and body were enormously distended and occupied a large portion of the abdomen. They were as big as a man's wrist. The weight of the organs was 3 pounds 7 ounces. The distension was caused by the presence of a greyish, slimy fluid of a peculiar sickly odor; estimated at about one quart. The mucous membrane of the uterus was congested.—(*Ibidem.*)

CANINE CYSTICERCOSIS [*S. N. Miller, Calcutta, India*].—Record of the post mortem of a dog very emaciated by distemper and died after successive epileptic fits. The post mortem revealed thirteen cysts, varying in size from that of a large pea to a small areca nut in the muscular tissue of the heart. There were no other pathological changes in the body. The brain could not be obtained for examination. Examined under the microscope, the contents of these cysts were in every respect those of *Cysticercus cellulosæ*.—(*Veter. Journ.*)

CONTAGIOUS VAGINITIS IN TWO COWS [*G. Mayall, M. R. C. V. S.*].—A shorthorn bull recently bought, served two cows. A few days after they whisked their tails and showed discomfort in making water. They were slightly off feed, uneasy behind and the milk supply rather reduced. There was a mucopurulent discharge from the vulva and a few ulcers on the mucous membrane. The animals were isolated and injections of mercuric iodide solution, 1 in 5,000, were made twice a day. Sulphate of magnesia, sodæ bicarbonate and nitrate of potash were administered. In ten days the animals were practically well. The bull was not treated; being returned to the vendor and lost from sight.—(*Ibidem.*)

INTERESTING CASE OF HYDROTHORAX—OPERATION AND RECOVERY [*Prof. T. G. Hobday, F. R. C. V. S.*].—Male greyhound, six years old, seemed "out of sorts." After a fortnight, respiration became hurried. Chronic pleurisy with effusion was diagnosed and iodide of potassium prescribed. Some short time after, about one month, paracentesis thoracis was performed on the right side, and 28 ounces of clear straw-colored fluid were removed. Improvement followed. Iodide was given for a week. The dog kept up eating and doing well. He had nux vomica for another three weeks until convalescence was established.—(*Ibidem.*)

VAGINAL FIBROMA [*H. Thompson, M. R. C. V. S.*].—Description of a large tumor from the vagina measuring 10 inches in length,  $6\frac{1}{4}$  in diameter at one part and  $18\frac{1}{2}$  in circumference at another. It weighed eight pounds. It was found in a cow in parturition which delivered a live calf. But previous to the appearance of the calf, a large fibroma had been pressed out of the passage and was hanging from the vulva by a long neck. It was attached to the left side of the vagina. A strong ligature was passed round the neck of the tumor and it was cut off. The parts being dressed with a little carbolized oil, the placenta was removed. There was no hemorrhage and recovery was without event.—(*Veter. Record.*)

FRACTURED PELVIS IN A COW [*W. Waters, M. R. C. V. S.*].—Roan, cross-bred, roomy cow, down with the third calf. She had been delivered without trouble by the owner. At the time of delivery a crack was heard as the calf's hind quarters were passing through the pelvis. The next day the cow was rather stiff on her right hind leg and had considerable swelling between the hip joint and the external angle of the haunch. Then came a large bony swelling on the left side, extending several inches above the sacral spines. There was a complete dislocation of the sacro-iliac joint. On examination per rectum was found a fracture of the neck of the ilium on the right side. The animal was very lame, could get up of her own accord but would soon lay down again. No special treatment was followed. The cow kept on giving from four to five gallons of milk a day, and with time she grew stronger on her leg and was sold three months after for her milking qualities. Later she was killed but no post mortem was made.—(*Ibidem.*)

LEAD POISONING IN MILCH COWS [*W. Waters, M. R. C. V. S.*].—The writer was called to attend to a first cow that presented peculiar symptoms: Falling off her milk and food first, and she then suddenly began to roar, broke her neck strap and rushed about the place as if she was mad. She also became aggressive. She had fits of madness, then falling in a semi-unconscious state, pawing with all four, rolling her eyeballs, grinding her teeth. No positive diagnosis was made. A second case presented similar symptoms but was very constipated. Enemas, full doses of salts were given to her. The next morning the two cows were dead, the second cow having also exhibited some brain symptoms before dying. Post mortem: Manifold and

rumen inflamed. Liver and kidneys soft and in a state of fatty degeneration. Heart had blood-stained patches on the outer surface and the left ventricle was much inflamed. The brain was soft. On making inquiries about the cause of the two attacks it was found that poisoning by lead was the cause of death; as several old paint tins with the contents licked out were found in the field where the cows had pastured. Chemical analysis of the viscera confirmed the diagnosis. A third cow became sick; again presenting the same symptoms and notwithstanding proper treatment, she also died and had similar lesions as the two others. The author calls the attention to the presence of the brain symptoms in all the cases and also to the condition of the heart, as being peculiar and not mentioned in text books.—(*Veter. Record.*)

**SPLenic HYPERTROPHY IN THE HORSE** [*W. J. Young, M. R. C. V. S., D. S., V. M.*].—The subject was about 20 years old. He presented very indefinite symptoms; loss of appetite, lassitude and pale mucous membranes. Nothing abnormal about his gait. Stimulants were given for a few days and finally the horse was destroyed. The post mortem revealed the presence of a spleen enormous and weighing 64 pounds. The splenic capsule and the trabeculae were considerably thickened and the pulp was not diffluent. From many autopsies that he has made the author concludes that spleens generally weigh more than what is mentioned in text books. While Chauveau says that "the average weight is 32 ounces, but that it may sometimes be three or four times its normal size," Doctor Young has found it weighing 10¾ pounds in a Clydeshire gelding, 8 pounds in a cab horse, 9 pounds and 11 ounces in a Shire gelding, 11¼ pounds in a Brewer's horse. He has also found the spleen of cats with surprising weight.—(*Ibidem.*)

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## FRENCH REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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**GENERALIZED CARCINOMA** [*P. Valade, Army Veterinarian*].—The horse Page has been operated for a tumor of the tail, whose nature had not been established with the microscope, but

whose macroscopic appearance made it suspicious of being carcinomatous. Nearly one year after he loses his appetite, has reduced in flesh, his respiration is accelerated, his heart beats rapidly, auscultation and percussion are negative. He is placed on observation and dies in 48 hours.

POST MORTEM: In the abdomen three litres of serosity. Intestines congested. In the mesentery of the small colon, there is a warty tumor as big as a nut. The liver is hypertrophied, weighs 20 kilogs. It is of yellow color and its parenchyma is invaded by a magma of clear yellow coloration, easily broken up. Spleen is three times its normal size, it weighs 9 kilogs. It contains nodules, some of which have an encephaloid aspect and others caseous degeneration. On the right kidney similar nodules are found. The lumbo-aortic glands are hypertrophied. The lungs are filled with secondary tumors of various sizes. Histological examination shows that these tumors were encephaloid carcinoma; and in all probability the tumor of the tail was of the same nature and the horse dies of slow and insidious generalization.—(*Rev. Gene. de Medec. Veter.*)

GENERALIZED CANCER OF THE THYROID GLAND IN A DOG [*M. M. Douville and R. Germain*].—The subject was a slut of six years, which had since two months an abscess of the neck. She has a cachectic appearance. On the throat and the upper part of the neck, she has two ovoid swellings, hard and almost painless, which are intimately adherent to the trachea. Situated one on each side they are united by a wide fibrous band. The left tumor, bigger than the right, has a fistulous tract from which escapes thin, reddish bad-looking pus. The lymphatic glands of the entrance of the chest are large. The temperature  $38.4^{\circ}$  C. On examination of the abdomen, the liver is felt quite large, the kidneys seem normal. The urine is clear and albuminous. Tuberculin test is negative. Though not positive, diagnosis of ulcerated cancer in way of generalization is made. The animal dies a few days after. POST MORTEM: Cadaver emaciated, on each side of the larynx, a tumor, that of the left side bigger. On the right side there is a marked hypertrophy of the retro-pharyngeal lymphatic glands, enveloping the thyroid gland. On the left side the mass is bigger, softened in its center and hollowed. It is formed by the union of the hypertrophied glands of the thyroid body also surrounded by the neoplasm. The lymphatic glands of the entrance of the chest are

also diseased. The liver is enormous and filled with neoplastic tumors of various sizes. The gall bladder is distended with bile. The liver weighed 3 kilogs. 600 grammes. The spleen was also diseased with secondary nodules similar to those of the liver. In the thoracic cavity there were lesions of purulent pleurisy, of suppurative broncho-pneumonia. The histological examination of sections from the various lesions showed without doubt that the case was one of primitive epithelioma of the thyroid body, A TYPICAL CANCER.—(*Rev. de Medec. Veter.*)

SPONTANEOUS LACERATION OF THE RECTUM IN A HORSE [*Mr. C. A. Arnoux*].—This animal in good condition has colic and his respiration is accelerated. Auscultation reveals nothing abnormal in the lungs. The pulse is small and not too quick. The colic is mild and the horse stands quite calm on his four legs. No diagnosis is made. Stimulating frictions are prescribed on the loins and flanks. Shortly after a new symptom is observed. The horse makes violent expulsive efforts and ejects only a few balls of manure. He stretches himself and urinates. All of these are accompanied with moaning. The conjunctiva become congested, pulse thready and quick; yet the horse does not scrape the floor, does not look towards his flanks and has no tendency to tympanitis. Rectal temperature is 39° C. Painful expulsion of fæces are taking place every ten minutes. No rectal examination was made on account of the violent expulsive efforts of the horse. The symptoms soon assume a more severe character and the horse died after 24 hours of sickness. The lesions found in the abdominal cavity consisted in a sero-bloody exudation. Great hypervascularization of the peritoneum. In the pelvic cavity an enormous blackish mass is observed, formed by a fold of peritoneum and containing large quantity of fæces. The peritoneum is opened, the fæces removed and a laceration of the rectum is observed interesting the muscular and the mucous coats in half the diameter of the organ, about 15 centimeters from the anus. No cause was found to explain this traumatism; hence the conclusion of the author: Spontaneous laceration from predisposition due to weakness of the organ.—(*Rev. de Medec. Veter.*)

BILATERAL AND SYMMETRICAL MULTIPLE EXOSTOSIS IN A HORSE [*Doct. Morel*].—Presentation of half a thoracic cavity of a horse showing curious bony lesions of the ribs and spinous

processes of the dorsal vertebræ. The 18 ribs are the seat of exostosis more or less voluminous, developed at the inferior part and immediately above the chondro-costal articulations. These tumors are part of the bone, they are irregular and look like mushrooms or grapes. The biggest has the size of the fist of a man. Alongside of the diaphysis of the ribs, there are a few osteophytes protruding under the pleura. Before dissection the exostosis were covered with fibrous tissue. Their surface was smooth and they had no adhesion with the surrounding tissues. The chondro-costal joints appear normal. The false ribs are ossified. There are also on the spinous processes of the dorsal vertebræ similar exostosis, but they are less developed. The thorax was deformed only on a level with the bony deposits; the ribs had their form, length and normal direction. The lesions were alike on both sides of the chest, they were bilateral and symmetrical. Probably other parts of the body presented similar deposits. And they were in all probability due to an ossifying diathesis, perhaps of infectious nature.—(*Rev. de Pathol. Comparée.*)

**TUBERCULOUS ULCERATION OF THE RECTUM** [*Mr. Ch. Darmagnac, Army Veter.*].—This stallion had a bad habit, masturbates himself continuously and is reduced almost to the condition of a skeleton. He is castrated. Complication of hernia of the small intestine takes place during the operation. A few hours after he has colic and acute peritonitis rapidly manifesting itself; the horse dies in a few hours. The abdominal cavity exhibits all the lesions of peritonitis by perforation; reddish effusion with food in suspension, peritoneum highly ecchymotic. A little forward of the pelvis, and on the superior part of the rectum, there is an ulceration. Well exposed, the rectum shows an ulceration, elliptic in form, with thick indurated edges, the mucous and muscular coats are gone and there remains only little granulations under the peritoneum which is thick and adherent. The rectal lymphatic glands are hypertrophied, they have fibrous envelopes with caseous centres. The liver contains tuberculous deposits of various sizes. In the thoracic cavity, the lungs are filled with tubercles with fibrous envelopes and caseous contents. Examination under the microscope reveals the presence of bacilli principally in the scrapings of the rectal ulceration. Inoculated guinea pigs developed tuberculosis. These lesions, true surprises of post mortem, explained the con-

dition of the animal, which had been attributed to his bad habit.—(*Rev. Gener. de Medec. Veter.*)

TWO CASES OF TRAUMATIC ARTHRITIS—RECOVERY [*Mr. Urbain, Army Veterinarian*].—In the majority of cases, such are incurable. These occurred in two horses, which had arthritis due, one to kick, the other to the prick of a fork, both on the left hock. The usual manifestations were present: swollen joints, great pain, no weight carried on the leg, purulent synovia escaping, high fever, temperature up in the  $40^{\circ}$  C., loss of appetite, etc., etc. Existing since 12 and 15 days, the cases had been treated with blisters, continued irrigations, injections of Van Swieten, all without results and the animals were about to be destroyed. A last attempt to treatment was followed by recovery in 20 days. This consisted in using nitrate of silver. A pencil of it seven centimeters long, was introduced in the fistula and held in place by a wadding dressing. The next day a sero-fibrinous reddish clot obliterated the fistulous tract. Without disturbing it, a second shorter pencil of nitrate of silver was introduced, and so on every two days, always carefully avoiding disturbing the clot. On the eighth day the tract was completely obliterated and from that day the symptoms subsided. The nitrate was stopped, the granulating process being controlled with burnt alum. On the fifteenth day the horses began to put weight on their legs and on the twentieth were able to take walking exercise. There remained for some time a slight swelling of the joint which did not interfere with their work.—(*Journ. de Zootechn.*)

VESICAL LITHIASIS IN A DOG [*Mr. A. Bouffanais*].—This is the case of a three-year-old bull dog which presented all the manifestations of urinary lithiasis and passed through the disease that carried him off, notwithstanding repeated catheterism which had given him but little relief. The post mortem was peculiarly interesting by the complications that were found: hydronephrosis, acrobystitis balanitis, etc. Opening the abdomen, the bladder was found very large, as big as a child's head and containing one and a half litres of fluid, red-brown in color, which after standing left a deposit of large calculi, weighing altogether 4 grammes and some of which were as big as a pea. The liver was yellow-brown and infectious. Both kidneys were very large and the seat of hydronephrosis. The urine that they contained was clear and free from deposits. The ureters were

normal. The prostate was a little hypertrophied. The urethra contained few calculi. At the base of the penian bone, there was a true mass of calculi which completely obliterated the canal. The glans penis was congested. There was acrobystitis and the mucus of the prepuce was swollen. The whole sheath was the seat of a large infiltration of urine.—(*Ibidem.*)

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## ITALIAN REVIEW.

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By Prof. A. LIAUTARD, M.D., V.M.

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AMPUTATION OF THE VAGINA IN A MARE [*Doct. Adolpho Luciani*].—This mare in condition, was delivered about two months ago, without difficulty, of a dead colt and of the envelopes. A few days after, she was covered again, notwithstanding the fact that the owner knew she had a small prolapsus of the vagina. This grew worse and it was only after it had been present four days that the writer was called. The vagina was forming then a big mass protruding through the vulva, and its mucous membrane much inflamed was the seat of many excoriations due to the animal rubbing against the walls of the stall. Urination was difficult and only a small quantity of urine was ejected by drops. Prolapsus of the rectum was threatening, the mare constantly making violent expulsive efforts. After disinfection with sublimate solution, the reduction was successfully attempted and a bandage of Delward applied. This failed in a short time, and the trouble returned. Chloral hydrate and morphia being resorted to then, the prolapsus was once more reduced and a pessary with a contending bandage applied. Those also failed and by the expulsive efforts pessary and bandage were soon thrown off. The animal was then cast, disinfection of the parts was made as thorough as possible and a ligature of the entire mass protruding was resorted to, carefully avoiding injury to the opening of the urinary meatus. The mass was divided into three portions and each one ligated separately insuring by this way a more complete hemostasis. After firm ligaturing the three parts were amputated with the bistouri about three



centimeters 'from the ligatures. Astringent sulphate of zinc vaginal washing brought the mare in convalescence in ten days.—(*Il Nuovo Ercolani*.)

A CASE OF SUPERFETATION IN A SLUT [*Doct. Antonio In-gardi*].—The author was called to help a slut to deliver. The history was that she had been covered first on a 13th of June and again on the 5th of July. On August 20th, say 68 days after the first service, she showed signs of delivery and indeed gave birth to a healthy, perfectly-formed and developed puppy. After the delivery of a perfect placenta taking into consideration the size of the abdomen of the mother, and having by manipulations detected the presence of another foetus in the left uterine horn and having also heard the weak foetal cardiac beats, by auscultation, another foetus was looked for. But it was not until six days later that the slut expelled after much expulsive efforts a female dead foetus, hairless, undeveloped, weighing 37 grammes and certainly not more than 40 days old. Evidently this was a case of fecundation of two ovules belonging to two successive periods. The slut covered the 13th of June became pregnant. The 5th of July, 22 days later, again covered, she again had a second fecundation. A first foetus was born 68 days after the first service regularly and completely to its end. Then several days after came another foetus not more than 40 days. These are facts worthy of consideration and which come to be added to the history of the subject.—(*La Clinica Veterinaria*.)

LACERATION OF THE MASTOIDO-HUMERALIS MUSCLE AND OF THE ŒSOPHAGUS IN A HORSE [*Doct. B. Germany*].—The subject had a large swelling, rather diffuse and extending from the laryngeal region to the breast and spreading laterally into the jugular grooves. It is said to be increasing rapidly. The animal carries the head extended, the hairs are standing and the skin is the seat of violent tremblings. Respiration is accelerated. The gait is uncertain behind. Rectal temperature  $39.4^{\circ}$  C. Mucous membranes congested. The skin is perfectly intact but as the animal has been standing next to one which is irritable, it is possible that the cause of the swelling be a trauma received from him. At any rate the swelling grows rapidly and although scarifications are made and give escape to an abundance of citrine fluid, it soon becomes necessary to perform tracheotomy to avoid asphyxia. Yet the animal dies the next day. POST MOR-

TEM: Citrine serosity infiltrates all the subcutaneous connective tissue of the region. The panniculus muscle of the neck is congested; between the middle and inferior third of the neck to the left of the trachea, the mastoido humeralis presents a laceration involving the two-thirds of the thickness of the muscle. And in the space of the lacerated edges there is a clot of blood mixed with putrefied parcels of food. The œsophagus presents also a solution of continuity opposite that of the muscle. The jugular and carotid are the seat of extensive inflammation. The author presents three suppositions to explain these lesions: 1st. The introduction of an irregular foreign body per mouth. 2d. A traumatic lesion from the inside, acting simultaneously with one from outside. 3d. A traumatic action applied from another horse upon the contracted muscle at the moment that an alimentary bolus was passing down the œsophagus.—(*Ibidem.*)

HYPERTROPHY OF THE SPLEEN IN A PIG [*Doct. Ruggero Fracaro*].—This animal was in good condition of nutrition. Aged about one year, it is not known to have ever been sick or having exhibited signs of colic. When slaughtered his spleen was found enormous, weighing five kilogs. 400 grammes. By its size and change of position it has also displaced the stomach. Near its apex and the lower extremity it measures in thickness about six centimeters and 10/12 at its base or superior extremity. It had a clear red color with tendency to grey, has a fibrous aspect and its serous coat has numerous small nodules of various sizes. Its trabecular system is hypertrophied and contains a substance very rich in blood corpuscles. The liver of the animal is also the seat of granular fatty degeneration and the lymphatic glands of the whole body are enlarged and of various coloration. All the other organs have nothing abnormal in their general aspect. According to the author in this case, the proportion of the spleen was greater than those observed in the case of Prof. Generalli in 1877.—(*Ibidem.*)

A CASE OF CERVICAL RIB IN A DONKEY [*Doct. Prof. Ugo Barpi*].—The writer has already published articles on various observations he has made in the vertebral column and ribs of solid-peds and reports a case which he believes brings a firm confirmation of his previous communications. A young donkey whose skeleton measures 0.90 centimeters in height, presents on a level with the transverse process of the last cervical vertebræ, a bony

prolongation, existing on both sides, elongated, ending slightly in point, and rather bending backwards. The seventh cervical vertebræ is perfect in conformation and has all the anatomical characters of that bone. Opposite its unitubercular transverse process, at its inferior face, the bony prolongation, about two centimeters long is found. Unfortunately during the preparation of the skeleton, it has not been possible to see if the terminal point was continued by a fibrous or cartilaginous extension, as in this case it would have proved that it was the first rib with its prolongation.—(*Il Nuovo Ercolani.*)

DR. N. S. MAYO, of Orion, Mich., has accepted the chair of Animal Husbandry and Veterinary Science in the Virginia Polytechnic Institute (agricultural and mechanical college), and will enter upon his duties September 1.

As a result of the practice act recently passed in the State of Colorado the governor of that commonwealth has appointed a state board of veterinary examiners. The governor's wisdom has been exemplified in the appointment of the following gentlemen on the board: Drs. W. W. Yard and Bocker, of Denver, and Dr. Geo. W. Dickey, of Colorado Springs.

UNDER the heading "The Docking of Horses," the *Live Stock Journal*, Chicago, of July 22, quotes President Rutherford, of the A. V. M. A., as follows:

"The majority of horses look much better undocked, and the practice is, after all, only a fashion or fad, which undoubtedly can be abolished without injury to anyone and at a great saving of pain and discomfort to the equine species. Not only is the operation itself painful, but the subsequent life-long annoyance and irritation to which docked horses are subjected in the summer time from the attack of flies especially when at pasture, is in itself a sufficient argument against the practice. I was pleased to see that Dr. James, one of our city veterinary practitioners, had the courage to come out openly over his own signature denouncing the practice, and stating that from this time on he would never dock another horse. It would be a good thing if all veterinary practitioners through the country would take the same views, as their influence in bringing about a change in public opinion on this point would be very great."

It is with much pleasure and satisfaction that we here reproduce the sentiments of the Veterinary Director-General of Canada, with whom we are in accord on the subject.

## SOCIETY MEETINGS.

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### VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The twenty-fifth anniversary of the organization of the Veterinary Medical Association of New Jersey was celebrated at Atlantic City, July 15-16, 1909.

The association assembled in the parlors of the Hotel Raleigh, July 15, at 2 p. m., with President J. B. Hopper in the chair. The following members were present: Carter, Christy, Conover, Fredericks, Glennon (James T.), Hendren, Horner, Hurley, Jones, Lindsay, Little, Loblein, Lowe (J. Payne), Lowe (William Herbert), Magill, McDonough, Paulin, Read, Rogers (Thomas B.), Runge, Smith (Thomas E.).

The following guests were also present: Hon. Franklin P. Stoy, Mayor of Atlantic City; Hon. Franklin Dye, Secretary of the New Jersey State Board of Agriculture, Trenton; Frederick C. Minkler, Professor of Animal Husbandry, New Jersey Experiment Station, Rutgers College, New Brunswick; James Hunter, Jr., M. D., Westville; Dr. Benjamin Pierce and wife, Springfield, Mass.; Prof. S. J. J. Harger, University of Pennsylvania; Dr. John Reichel, Bacteriologist of the Live Stock Sanitary Board of Pennsylvania, and wife; Hon. T. E. Burke, President Board of Fire Commissioners, Newark, N. J.; Dr. C. J. Marshall, Vice-President American Veterinary Medical Association, Philadelphia; Mr. Walter I. Rogers, Woodbury, N. J.; Dr. F. H. Schneider, Philadelphia; Dr. William J. Lentz and wife, Philadelphia; Dr. M. W. Drake, Philadelphia; Dr. Otto G. Noack, Reading, Pa.; Dr. Thomas Castor, Philadelphia; Dr. L. J. Belloff, New Brunswick, N. J.; Dr. T. E. Smith's mother and niece May, Jersey City; Dr. James T. Glennon's mother and son Edward, Newark, N. J.; Mrs. John B. Hopper, Ridgewood; Mrs. J. H. Conover, Flemington; Mrs. J. B. Jones, Atlantic City; Miss McLoughlin, Philadelphia; Mrs. A. E. Hanner, Newark; Mrs. H. W. Read, Freehold; Mrs. R. W. Carter, Jobstown; Mrs. Werner Runge; Mrs. S. G. Hendren, Montclair; Mrs. William Herbert Lowe, Paterson.

The president introduced Hon. Franklin P. Stoy, Mayor of Atlantic City, who extended a most cordial welcome to all those in attendance. Dr. Wm. Herbert Lowe in behalf of the association and its guests responded to the Mayor's address in an appropriate manner.

TELEGRAM FROM THE ALUMNI ASSOCIATION OF UNIVERSITY OF PENNSYLVANIA.

Hartford Depot, Conn., July 15, 1909.

Veterinary Medical Association of New Jersey.

Dr. Wm. Herbert Lowe, Secretary,  
Hotel Raleigh, Atlantic City, N. J.

For the past twenty-five years our hearty congratulations. For the years to come, best wishes and the helping hand.

Alumni Association, Veterinary Dept., University of Pennsylvania. Colton, President.

AFFECTIONATE SOUVENIRS FROM PROFESSOR LIAUTARD.

(This letter was received too late to be read at the meeting, but is included in this report, for the benefit of those interested.)

Paris, France, July 8, 1909.

Dr. Wm. Herbert Lowe, Secretary.

My. Dear Doctor.—Your very kind letter of June 28 reached me this a. m. If I was what I used to be, I might take the boat to-morrow, but even then I would be too late, as at best I could not reach your meeting until it would be over. This letter will indeed arrive in my place and that not before the 17th. At any rate let me tell you how I appreciate your invitation; let me assure you of my warmest and sincere wishes for your association and yourself personally, and ask you to convey to your colleagues the affectionate souvenirs of one who would be so happy if he could only once again visit you.

Yours very cordially,

A. LIAUTARD.

Excellent papers were read and ably discussed as follows: "The Standardization of Drugs," Dr. T. B. Rogers, Woodbury; "Demonstration of Arsenic Tests," Mr. Walter Irving Rogers, Woodbury; "Methods Employed in the Eradication of the Recent Outbreak of Foot-and-Mouth Disease," Dr. S. G. Hendren,

Montclair; \*"Opportunities for Live Stock Breeding in New Jersey," Prof. Frederick C. Minkler, New Brunswick; "The Responsibilities of the Veterinarian in Matters of Public Health," James Hunter, Jr., M. D., Westville.

The banquet was held at the Hotel Raleigh on the evening of July 15, and was an affair long to be remembered. President Hopper officiated as toastmaster in a most entertaining manner. The following toasts were responded to: "Our Past Presidents," Dr. E. L. Loblein; "Veterinary History," Dr. William Herbert Lowe; "The Agriculturist and the Veterinarian," Hon. Franklin Dye. Hon. T. E. Burke was called upon and responded to the toast "Our Guests" in a very humorous and entertaining manner.

Dr. R. R. Ramsey, Jersey City, was elected to membership. The resignation of Dr. Archibald McBride, Jersey City, was accepted.

Chairman Lindsay of the Legislation Committee reported progress.

The committee on the McDonough Five-Calked Horse Shoe reported favorably and a number of practitioners reported great benefit from the use of the five-calked shoe.

On motion of the secretary, duly seconded by Dr. Loblein, the action of the state authorities in purchasing stallions for the improvement of the draft horses of the state was endorsed by a unanimous vote. Dr. C. J. Marshall extended an invitation to his New Jersey confrères to attend the next meeting of the Pennsylvania State Veterinary Medical Association to be held at Lancaster, August 31.

The president appointed delegates as follows: Pennsylvania—Drs. Hurley, Harker, Carter, T. B. Rogers, McDonald and Little. New York, at Ithaca—Drs. J. Payne Lowe, J. T. Glennon, McDonough, Loblein, Lindsay. American Veterinary Medical Association, at Chicago—Lindsay, Magill, Horner, Hurley, T. B. Rogers, Runge and Jones.

After the transaction of routine business the association adjourned to meet at Jersey City January 13, 1910.

WM. HERBERT LOWE,  
Secretary.

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\*Published elsewhere in this issue of the REVIEW.

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MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.\*

The twelfth semi-annual meeting was called to order at Stillwater, Minn., July 14, 1909, by the president, Dr. C. E. Cotton, at 10 a. m. Roll call showed thirty members present.

Reading of the minutes of the last meeting dispensed with on motion of Dr. Amos, seconded by Dr. C. A. Mack.

Address of welcome by Mayor J. W. Foley, who delivered a short but touching address, which was ably responded to by Dr. M. H. Reynolds.

Moved by Dr. Amos, seconded by Dr. LaPointe, to extend a vote of thanks to Mayor Foley for his able address of welcome. Carried. Dr. Cotton spoke very feelingly on the address of welcome in extending the vote of thanks to Mayor Foley. Treasurer's report read and accepted subject to the report of Finance Committee at the end of the year.

Dr. C. A. Mack gave a very elaborate report on "Colleges," which was accepted, and discussed by Drs. Cotton, Reynolds and S. H. Ward.

Dr. Ward, in the absence of the Committee on Infectious Diseases, gave a report on "Government Investigations of Foot and Mouth Disease Originating from Vaccine of Cow Pox." The doctor then, as chairman of the Committee on Legislation and Empirics, reported on the bills that had been introduced relative to testing of cattle, etc.

Dr. Ward L. Beebe, not being present, his report on Bacteriology was read by the secretary.

After the reception of six applications for membership, an adjournment for luncheon was called.

A Directors' meeting was called at 1.30 p. m., and the meeting reconvened at 2 o'clock. In the absence of Dr. McKenzie, Dr. La Pointe reported on "Surgery." Dr. W. Amos reported on "Medicine." Dr. M. H. Reynolds submitted a report of the Examining Board.

The Resolution Committee not having a member present, President Cotton appointed another committee who rendered the following report:

RESOLUTION.—Resolved, That the veterinary profession of Minnesota condemn the method of deception adopted by Dr.

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\*Committee reports and papers will appear in another number.

David Roberts to lull the people into a fake sense of security. That no one desirous of relieving the burdens of the public and claiming a professional degree resorts to expensive advertising to help them by appealing in this way for their money, but makes known any discovery of merit through the channels of the professional association. His claims are such as characterize them as not well founded, and if it was not for thoughtless endorsements of agricultural experiment stations often given by employees, the implied endorsements by reputable agricultural and breeders' journals, whose commercial ends often prostitute their reading columns to the deception of their readers as well as encouraging them to part with their money for remedies that have not been proven more valuable than lines of treatment well known by every trained and educated veterinarian, this association would regard such a resolution as the present unnecessary, and such advertising schemes as beneath its notice.

RESOLUTION ON THE DEATH OF DR. PRICE.—Whereas, It has pleased the Almighty to call from our midst our beloved friend and valued member of this association, therefore, be it

Resolved, That we, the members of this association, assembled here, do hereby express our heartfelt sympathy to the sorrowing wife and family of our departed friend, Dr. Richard Price. And that a copy of these resolutions be sent to the bereaved family and also spread on the minutes of this association.

DR. J. W. GOULD,  
DR. L. HAY,  
DR. W. AMOS.

Dr. Walter Amos presented a paper on the subject of "Our Society's Welfare." It was recommended that this paper be copied and a copy sent to each member.

Dr. C. C. Lipp read a very interesting paper on the subject of "Leucocytes and Tissue Metabolism."

Dr. Reynolds presented a very instructive paper on the "Practical Results of the Sero Vaccine Treatment for Hog Cholera."

Dr. Humphry (M. D.) in the absence of Dr. Bolyen (M. D.), read a paper on the "Transmissibility of Human Tuberculosis," which was well written and ably defended.

Dr. Coffeen reported a very interesting case of swamp fever in twelve (12) head of horses in different camps, losing only two (2) out of twelve (12) in nine (9) weeks' treatment. In treat-



ing these cases he used large doses of Fowler's solution, 2 oz. every dose, three or four times a day, and 2 oz. of a solution of quinine in alcohol every four (4) hours, and after a few days giving Fowler's solution three (3) times a day.

Dr. Cotton urged all members to attend the A. V. M. A. at Chicago. Meeting adjourned.

At 8 p. m. fifty members and ladies sat down to the banquet table at the Sawyer House, and a spread was served fit for a king. After the feast Dr. Cotton, acting as toastmaster, called upon the following, who responded in a very fitting manner: Dr. W. Amos, "The Veterinarian's Duty to His Profession"; Mrs. C. A. Mack, "Our Guests"; Dr. J. N. Gould, "The Veterinarian Politically and Socially"; Judge F. J. Wilson, "Live Stock Industry"; Mrs. G. Ed. Leach, "The Veterinarian in Home Life"; Dr. S. H. Ward, "The Ladies." Supt. Geo. Jarchow was called upon and made a few points with short stories.

The next day was spent in sight-seeing, visiting the State Prison, a trip on the river in launches, ending with a very enjoyable time at dinner at the Anchorage, twelve miles below Stillwater, and a lovely trip home in the evening. Everyone went away more than pleased with the meeting and entertainment.

DR. G. ED. LEECH,  
Secretary.

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## ALABAMA VETERINARY MEDICAL ASSOCIATION.

The Alabama Veterinary Medical Association held its second annual meeting at Auburn, Alabama, July 23 and 24, 1909, at the Veterinary Department of the Alabama Polytechnic Institute. President C. C. Thach delivered a most excellent address of welcome to the visiting veterinarians. Dr. C. A. Cary gave an informal talk on the applications of the State Live Stock Sanitary Law of Alabama. Dr. W. A. Scott, of Columbus, Ga., read a very interesting paper on Septic Metritis in cows. The treatment of tetanus was then discussed by all the veterinarians present. A variety of opinions were expressed and various treatments were suggested. Dr. G. W. Browning, of Montgomery, Ala., then read a paper on "Echinacea Angustifolia in the Treatment of Influenza." The doctor has had remarkable success with this drug, not only in influenza, but also in azoturia. Dr.

I. S. McAdory, of Auburn, Ala., then read a paper on "Chorea in Dogs," in which he discussed at some length the more recent treatments for this trouble. Dr. W. L. Thornton then gave a demonstration in the Physiological Laboratory of the Veterinary Department to show the effect on the compression of a turtle's heart between the ventricle and the auricle. Slight compression did not prevent the wave of contraction passing regularly from the auricle to the ventricle through the bundle of His. Greater compression stopped the ventricle, and left only the auricle beating. Doctor Thornton also gave a demonstration of a simple and practical method of obtaining the approximate measure of the blood pressure in the horse. Dr. M. F. Jackson, of Birmingham, Ala., gave an interesting talk on the methods of treating azoturia. The doctor places great stress on the employment of slings and the use of strychnine to make the animal stand in the sling. He reported excellent results with this treatment. Dr. J. A. Kiernan, Federal Veterinarian in Charge of Tick Eradication in Tennessee, Mississippi and Alabama gave an interesting talk on the progress and value of tick eradication in Alabama. The doctor stated that tick eradication was the most important and valuable movement in the interest of agricultural improvement that had been undertaken by the Bureau of Animal Industry. This paper led to unanimous endorsement of a resolution favoring tick eradication, and calling upon the United States Government, various states interested and the county officials in all the counties of tick-infested states to put more money behind this work, and to lend their influence in an educational campaign, and in actual work to wipe the tick off the map of the United States. A general discussion on the differential diagnosis and treatment of sunstroke brought forth lively and interesting remarks from all the members present. Some confusion seemed to prevail as to the best treatment, also some disagreements as to diagnosis, but the consensus of opinion seemed to prevail that there was no specific treatment, and that all cases were not identical in their manifestations. The differentiation of osteoporosis and rheumatism was next considered. Most of them agreed that there were cases where a positive set diagnosis could not be made, especially in the early stages of osteoporosis in which there was no enlargement of the bones. Some thought it possible that the two diseases might be present in the same animal at the same time. Dr. P. F. Bahnsen of Americus, Ga., then read a very interesting and instructive paper on "Differential

Diagnosis of Colics." The doctor apparently takes the ground that colics embracing a variety of conditions which involve the alimentary canal from the stomach to the rectum. This paper was most extensively discussed, and it also brought forth, as usual, a variety of opinions and methods. It is very probable that the next annual meeting of this association will be held in Mobile, Alabama.

Seven visiting veterinarians and sixty farmers from various parts of the state were present. Seven new members were elected. Dr. P. F. Bahnsen, of Americus, Ga., was elected an honorary member of the association.

C. A. CARY.

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## THE VERMONT VETERINARY MEDICAL ASSOCIATION.

The second semi-annual meeting was held at the Berwick House, Rutland, Vermont, July 27, 1909. The meeting was called to order at 2.30 p. m. by the president, Dr. F. C. Wilkinson, with nine veterinarians in attendance. Proceedings of the February meeting were read and approved.

Remarks by the president, Dr. F. C. Wilkinson: "Gentlemen, I cannot but feel that I am placed in a very honorable position as your president, and at the same time that it is a position I cannot fill in the complete way that I should wish; but since you were so good as to choose me as the first president of the Vermont Veterinary Medical Association, I will do all in my power to make up for my deficiencies, and I sincerely hope that this association may not suffer from your choice. Now, gentlemen, before going further, allow me to thank you exceedingly for your kindness in electing me your president. I will ask your kind indulgence to my faults and shortcomings, and that you will, one and all, assist me in carrying out the duties of the chair. With that assistance from you, which I am sure you will render to a brother, my share of the responsibilities will be immensely lightened.

NEW MEMBERS.—Dr. Robert Wier, Rutland, Vt.; Dr. G. H. Farnsworth, Rutland, Vt., and Dr. A. C. Brodeur, Bellows Falls, Vt., were duly vouched for and elected to membership.

The Committee on Association Seal, Dr. Stevenson, chairman, made its report, as to form, size and inscription of seal.

Motion by Dr. Robert Wier, seconded by Dr. J. C. Parker, that the president be empowered to fill temporarily any vacancies arising among the officers. Carried.

PROGRAM.—“The Veterinarian in General,” by Dr. J. C. Parker. Discussed by Drs. Robert Wier, F. C. Wilkinson and J. C. Parker. “Faults (Veterinary Advertising),” by Dr. O. E. Barr; discussion by Dr. F. C. Wilkinson. “Parasitic Enteritis (Translation),” by Dr. F. C. Wilkinson; discussed by Drs. O. E. Barr and J. C. Parker. Report of Cases—Tetanus, by Dr. F. C. Wilkinson; discussed by Drs. O. E. Barr, F. C. Wilkinson, J. C. Parker, Robert Wier and R. J. Vosburgh. “A Disease Similar, if not Meningitis,” by Dr. Geo. T. Stevenson; discussion by Drs. Robert Wier, F. C. Wilkinson, J. C. Parker, R. J. Vosburgh and F. W. Chamberlain.

Motion by Dr. F. W. Chamberlain, seconded by Dr. Geo. T. Stevenson, that an official stenographer be employed at our meetings, that more complete proceedings may be secured for preservation. Carried.

Executive Committee decided that the next regular meeting of the Association be held at White River Junction, January 19, 1910.

A motion by Dr. Parker, seconded by Dr. Geo. H. Farnsworth, that the secretary provide a banquet for the next meeting of the Association, each member present bearing his share of the expense. Carried.

The members enjoyed a social time. Adjourned 6 p. m., July 27, 1909.

FRANK W. CHAMBERLAIN,  
Secretary-Treasurer.

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## SCHUYLKILL VALLEY VETERINARY MEDICAL ASSOCIATION.

The annual session of the Schuylkill Valley Veterinary Association was called to order by Dr. Geo. R. Fetherolf, who occupied the chair in the absence of the president and vice-president, at the Board of Trade Room, Reading, Wednesday, June 16. After roll call the minutes of the previous meeting were read and approved.

A few interesting communications were read. The Committee on Meat and Milk Inspection reported favorably on the work of milk hygiene. They offered the following resolution:

We, the Schuylkill Valley Veterinary Association, in convention assembled, believe that the system of milk and meat inspection promulgated by the Board of Council of Reading has already shown its worthiness. We, therefore, heartily commend the city council for instituting meat and milk inspection for protection of the honest dealer and consumer, and in fighting tuberculosis, this serious disease. Again, we, furthermore, endorse the stand taken by the Retail Butchers' Association in supporting milk and meat inspection and deplore the fact that the milkmen who are in favor of inspection are seemingly trying to obstruct the progress of the city.

Election of officers resulted as follows:

President—I. C. Newhord.

Vice-President—A. R. Potteiger.

Recording Secretary—W. G. Huyett.

Corresponding Secretary—C. D. Graber.

Treasurer—U. S. G. Bieber.

All the officers were elected by acclamation upon a motion.

ESSAYS AND PAPERS.—Valuable case reports were offered in Dr. Huyett's paper, and brought forth much discussion.

An essay entitled "The Great Importance of Milk Inspection" was read by Dr. Geo. R. Fetherolf, City Milk and Meat Inspector, who deserves much credit for such an able paper.

Adjourned. Next meeting of this organization is Wednesday, Dec. 15, 1909.

W. G. HUYETT,  
Secretary.

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## MAINE STATE VETERINARY ASSOCIATION.

### RESOLUTIONS ADOPTED BY MAINE STATE VETERINARY ASSOCIATION.

Whereas, At a meeting of the Maine State Veterinary Association held at the Bangor House in the city of Bangor, on the fourteenth day of April, A. D., 1909, it having been shown that certain Doctors of Veterinary Surgery holding positions as Veterinary Inspectors, with fair and equitable compensation and en-

joying the prestige and influence which said positions carry, and utilizing said positions to increase their private clientele to the damage and financial loss of all the other members of said association at said Bangor, the said association at said Bangor meeting, unanimously

Resolved, That the said Government Inspectors be compelled by the Bureau of Animal Industry to devote all their time and energy to the duties of said positions; that they retire from private practice or from their positions as Government Inspectors, and it was further

Resolved, That if any or all of said Government Inspectors refuse to retire from practice that their resignation as said Government Inspectors be requested, and if refused that said Government Inspectors be discharged; and it was further

Resolved, That a copy of these resolutions be forwarded to Dr. Melvin, Chief of Bureau of Animal Industry and to the AMERICAN VETERINARY REVIEW, of New York.

W. H. LYNCH, D. V. S., Portland.

C. L. BLAKELY, M. D. V., Augusta.

I. L. SALLEY, D. V. S., Skowhegan.

Committee on Resolutions.

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## THE VETERINARY ASSOCIATION OF MANITOBA.

The semi-annual meeting of this association took the form of a clinic at the Agricultural College, on Wednesday, July 14, the following members present: Drs. Bryant, Dauphin; S. A. Coxe, Brandon; W. A. Dunbar, Winnipeg; J. F. Fisher, Brandon; J. A. Hackett, Hartney; G. P. Hayter, Birtle; W. Hilton, Winnipeg; A. G. Husband, Belmont; J. J. Irwin, Stonewall; M. Little, Pilot Mount; W. Little, Boissevain; D. H. McFadden, Emerson; C. D. McGilvray, Winnipeg; J. D. McGillivray, Winnipeg; L. McQueen, Selkirk; W. Manchester, Wawanesa; M. B. Rombough, Winnipeg; S. Robinson, Brandon; W. H. Smith, Carman; M. B. Stiver, Elgin; J. H. Todd, Grand View; F. Torrance, Winnipeg; E. P. Westell, Winnipeg; A. E. Williamson, Winnipeg; and T. Z. Woods, Winnipeg. Visitors, Drs. Cook, of Winnipeg, and Grenside, of New York.

The cases presented for treatment were:

Case I.—Chronic tendonitis in front leg. Treatment—actual cautery in lines. Operator, Dr. J. F. Fisher.

Case II.—Ringbone. Treatment—actual cautery in lines. Operator, Dr. C. D. McGilvray.

Case III.—“Roaring.” Treatment—removal of part of the vocal chord with suture of the remainder. Operator, Dr. Rombough.

Case IV.—Cryptorchid. Operator, Dr. Bryant.

Case V.—Tendonitis and incipient navicularthrititis. Treatment—median neurectomy. Operator, Dr. Torrance.

After the clinic the members were entertained at lunch in the dining room of the college and then inspected the different buildings and their equipment.

F. TORRANCE,  
Secretary-Treasurer.

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## SOUTH DAKOTA STATE VETERINARY MEDICAL ASSOCIATION.

The ninth annual meeting was held at the Auditorium, in Sioux Falls, July 13 and 14, 1909, Dr. C. McDowell presiding. President McDowell gave a very interesting opening address, which was followed by the regular business meeting.

The election of officers resulted as follows:

President—C. D. Tuttle, Canton, South Dakota.

First Vice-President—S. W. Allen, Watertown, South Dakota.

Second Vice-President—Hallerscheld, Aberdeen, South Dakota.

Secretary-Treasurer—J. A. Graham, Sioux Falls, South Dakota.

Thirteen new members were elected.

The examining board met for the first time, as the law became operative July 1. There were 26 applicants for examination, 23 of whom passed the board.

Forty-two non-graduates were licensed under the five year clause. The examining board consists of the following gentlemen: E. L. Moore, Brookings, S. D.; J. P. Foster, Huron, S.

D.; C. McDowell, Watertown, S. D.; J. C. Trotter, Beresford, S. D.; J. A. Graham, Sioux Falls, S. D.

The afternoon was devoted to a clinic, which was conducted at the Graham and McGilvray Veterinary Hospital. In the evening a banquet was enjoyed by the members and their wives at the Cataract Hotel. Several interesting addresses were given by members of the association. The next meeting will be held in Sioux Falls, July, 1910.

J. A. GRAHAM,  
Secretary-Treasurer.

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## CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting of the Connecticut Veterinary Medical Association was held on Aug. 3d at Dr. Thos. Bland's Veterinary Hospital, Waterbury, Conn., Dr. P. T. Kelley presiding. Twenty-three members were in attendance.

The clinic commenced about 11 a. m. The first subject was a 10-year-old driving mare. History—A kicker and unsafe to drive or to go near her hind extremities. Oophorectomy was performed by Dr. V. M. Knapp, of Danbury. Both ovaries were very large and cystic.

Spaying bitch median line, Dr. C. H. Beere.

Spaying bitch flank operation, Dr. F. C. Bushnell.

Castration of cryptorchid, Dr. Thos. Bland.

Opening the larynx of a horse that had been operated upon for roaring on the 9th of January, this year; the union of the cartilage to the laryngeal wall was perfect, the cicatrix not being perceptible. Two tufty growths were found about an inch long on either side of the larynx posterior to the arytenoid cartilages. These growths were clipped away with curved scissors and cauterized with the platinum cautery. There seemed to be no narrowing of the lumen of the larynx, although the larynx itself was considerably hardened, showing commencing ossification. Operators—Loveland, Knapp and Bland. Anæsthetizer—Lyman.

A very interesting and instructive operation was performed by Dr. R. P. Lyman, removing about three inches of intestine from a fox terrier bitch.



At this writing all the animals operated upon have made a perfect recovery.

After the clinic the members enjoyed a banquet at the Abagadasset Club, where many pleasant toasts were indulged in. Discussions relating to the clinic and many other subjects were the features of the evening.

B. K. Dow,  
Secretary.

THE brood-mare Flair, from the estate of the late Sir Daniel Cooper, brought \$80,000 at Tattersall's, London, recently.

THE investigation by the United States Department of Agriculture into the charges against the meat inspection service under the B. A. I., by J. T. Harms, has shown them to be groundless.

THERE'S room for both the automobile and the horse, and although if the horse is skittish the automobile may crowd him into the ditch, it isn't likely to crowd him to the wall. The old family nag will long maintain his supremacy in his own field. The human love for horse flesh can't be narcotized by mere machinery.—*The Hartford Times*.

DR. F. C. GRENSIDE, of New York City, has recently returned from an extended trip through Canada and the Northwest. Going, the doctor attended the meeting of the Veterinary Association of Manitoba and the industrial fair at Winnipeg, then went on to Vancouver and down to Seattle, where he attended the Alaska-Yukon Exposition; then, coming home, visited Kansas City, spending some time with the veterinarians of that place and visiting the Kansas City Veterinary College, and, at Chicago, doing likewise. A month was devoted to the trip.

SAID Abd-el-Kader: "A thoroughbred horse is one that has three things long, three things short, three things broad, and three things clean. The three things long are the ears, the neck and the forelegs. The three things short are the dock, the hind legs and the back. The three things broad are the forehead, the chest and the croup. The three things clean are the skin, the eyes and the hoof." Also: "If a horse, when drinking from a stream that flows level with the ground, can remain upright on all fours without bending either of his forelegs, be assured that his form is perfect, that all parts of his body harmonize and that he is thoroughbred."—*Rider and Driver*.

## NEWS AND ITEMS.

---

DR. J. MARTIN RICE, Bobcaygeon, Ont., Canada, has gone to England to take up post-graduate work at the Royal Veterinary College, London, under Sir John McFadyean.

DR. A. T. FERGUSON, of Marshall, Texas, has gone to Amarillo, that state, to assume charge of the stock yards there during the absence of Dr. Hugh Maxwell who has gone to Canada to take a post-graduate course. Dr. Maxwell will return to his post next April.

THE faculty of the Department of Veterinary Medicine at the University of Pennsylvania is being enlarged and reorganized. Dr. John W. Adams, who has been Professor of Veterinary Surgery and Obstetrics for several years, will continue in that position, but will devote all of his time to the work of the school and the hospital, instead of a part of his time as heretofore. He will also have charge of the surgical clinic in the hospital. Dr. C. J. Marshall, who has been Demonstrator of Clinical Medicine for several years, has been elected Professor of Veterinary Medicine, and will have charge of the medical clinic in the hospital. Dr. W. J. Lentz has been elected Assistant Professor of Veterinary Surgery and Obstetrics, and Dr. Stephen Lockett, Assistant Professor of Veterinary Medicine. Drs. Marshall, Lentz and Lockett will also give all their time to the work of the school and hospital. The reorganization has not yet been completed and additional appointments will be announced later. Another portion of the new building and equipment will be ready for the use of the students when they return at the opening of the session in September.

FEDERAL QUARANTINE BECAUSE OF SHEEP SCAB IN KENTUCKY.—The disease of sheep known as scab or scabies has become so prevalent in Kentucky that the Secretary of Agriculture has considered it necessary to declare a quarantine. This action comes after a thorough examination into conditions. The fact that the disease is contagious, being spread by parasites known as scab mites, makes necessary a measure of protection sufficient

to prevent its spread into other states. Infection is known to exist to a slight extent in two adjoining states, but conditions there are not serious enough to require Federal quarantine.

The order for the quarantine, which is effective August 16, provides that sheep shall be moved interstate from Kentucky only under the following conditions: Sheep that are diseased with scabies and that have been dipped once in an approved dip under the supervision of an inspector of the Bureau of Animal Industry within ten days before shipment may be shipped interstate to a recognized slaughtering center for immediate slaughter. If diseased sheep are to be shipped interstate for stocking or feeding purposes, they shall be dipped twice with an interval of ten days. Other sheep may be moved interstate for feeding or stocking purposes after one dipping under government supervision, or they may be shipped interstate under quarantine restrictions for immediate slaughter without dipping.

Inspection and dipping under the regulations will be performed only at points where Federal inspectors are stationed. Louisville is at present the only place in the state having dipping facilities, but if proper yarding and dipping facilities should be installed at other points, the Department of Agriculture would consider the advisability of establishing inspection at such places for the convenience of shippers.

For many years sheep scab has been quite prevalent in the West, but as a result of the combined efforts of the Federal and state authorities much territory has been entirely freed and the infection in other sections has been greatly reduced, and it is hoped that within a few years more the disease will be entirely stamped out. This is the first time that the disease has obtained a sufficient foothold east of the Mississippi River to require a Federal quarantine.

Information regarding the conditions of the quarantine and details of treatment and handling may be obtained free by addressing a request to the Bureau of Animal Industry, Washington, D. C.—From the Bureau of Animal Industry, United States Department of Agriculture, Washington, D. C.

**THE SCORE-CARD SYSTEM OF DAIRY INSPECTION.**—Modern investigations in dairy sanitation have shown the importance of producing and handling milk under clean conditions, and a significant factor in attaining that result is the score-card system of dairy inspection, according to Messrs. Clarence B. Lane and George M. Whitaker in a report just published by the Bureau

of Animal Industry of the United States Department of Agriculture. The main advantage that they attribute to the score-card system is that it deals with itemized conditions. City milk inspection a few years ago was merely a matter of detecting added water or preservatives. With recent progress in sanitary science the work has broadened, and boards of health are now investigating the sanitary phases of milk production, transportation and distribution.

In the smaller cities most of the milk consumed is retailed by the producer, and even in places of considerable size many producers are also retailers. In cases where the functions of producer and retailer are merged in one person an inspection of the dairy farm discloses the methods of distribution as well as production, and the dairy farm score-card answers all purposes under such conditions.

As cities grow, middlemen become a necessity and their places of business are more familiarly known as "plants." These plants have wide range of capacity, equipment and methods. One extreme is a building 300 to 400 feet long on a spur of a railroad where milk is received by the trainload, cooled, mixed, filtered, perhaps pasteurized, canned or bottled, and held in cold storage until retailed in the city. The other extreme is the dealer retailing only a few gallons who may have no plant and his equipment consist of only a carrier can and a quart measure which were washed in the kitchen sink with the family dishes; or he may have fitted up the dark, illy ventilated basement of his residence as a "milk plant," with a wooden tank for cooling the milk, a few dozen bottles, a washtub in which to cleanse them, a dipper for filling, and a brush to agitate lukewarm water inside the bottles. It does not necessarily follow that all small dealers adopt improper practices, but the chances are that the ordinary milkman with small capital and only a little at stake will not take as much care as a person differently situated.

For the past two years the Bureau of Animal Industry through its Dairy Division has been making a study of dairy inspection with a view to developing a system that would be practical and comprehensive, and has assisted the authorities of a number of cities in different sections of the country in applying such methods for the improvement of their milk supplies. Some results of this work, together with instructions for using the score-card system, are given in the publication

referred to, which may be had by addressing a request to the Bureau at Washington, D. C., for Circular 139.

A striking example of the possibility of improving dairy conditions through the score-card system is shown in the report of 20 dairies at Richmond, Va., which made the greatest percentage of gain from the first score to the last during a period of six months. The lowest score was 20 points on a scale of 100. "This place," said the health officer, "was indescribably bad. Seventeen cows were huddled into two dark, foul sheds, with about 200 cubic feet of air space to each cow. The water supply was grossly contaminated. The milk was poured from dirty milk pails into cans which stood in manure in a dirty stable yard. Everything was in keeping with this partial picture." This dairyman immediately took steps to meet the requirements of the scoring system in use, and his scores showed steady improvement visit by visit, the last score showing 62.5, which was above the average. The same health officer further states:

"Common justice demands that full credit should be given to the milk producers and to the city dairymen for their share in what has been accomplished. To anyone who was familiar with the conditions under which milk was produced and sold in this city a year ago, a visit to the dairy farms supplying us with milk at the present time would prove little short of astonishing. On every hand new stables have been erected and old ones improved, milk houses have gone up, stable yards improved and most important of all, better methods of milking, handling and transporting milk."

Many large dealers employ an inspector to give dairies supplying them with milk a rating on the basis of the score-card, requiring them to reach a certain standard or stop shipping milk. To illustrate: One large milk company added the following note to the list of prices: "These prices apply only to those dairymen whose premises are scored 60 per cent. or higher by the department of health. Those who score less than this will have a reduced price paid, and milk from dairies scoring less than 50 per cent. is not desired and will not be accepted."

Unless public sentiment demands a good quality of milk and consumers are ready to meet the increased cost, improvement must necessarily be slow.

JAMES ADDISON HICKS, of Kerens, W. Va., used to heal horses of the bots by the "laying on of hands." Before the

old mountaineer's death a few months ago, he was induced to tell the secret of how he did it.

"Why, it's not so terrible remarkable when you just know how," said Mr. Hicks. "You first catch your horse, then you bleed him in the mouth—the second bar in the roof—mind you, the second. I'll show you just how it is done if you hold that horse's head.

"After you bleed him you commence to rub him between the ears, continuing down his spine to the tip of his tail—the very tip of his tail, mind you.

"But that isn't all. You must jerk his tail good and hard, so it really surprises him; then slap him in the flank rather sharply, so he'll eye your advances coldly.

"I suppose you think that's all; but it ain't. Most important of all is the rhyme you must say. It ain't exactly poetry—blank verse, guess. Anyway, this is what you say, and you must say it three times or it won't do a mite of good:

"My wife walks over the land,  
Carrying three worms in her hand;  
One red, one black, one white,  
And they all shall die this night."

"I 'most forgot to tell you that I say 'My wife, because she's dead. A woman would say 'My husband' if he's dead; or 'My mother,' or any one who is dead. I have never failed to cure a case in sixty years, and people far and near know I do just what I claim."

"And you don't use any medicine?" queried the skeptical New Yorker.

"To be sure I do," was the indignant protest. "I'm no Dowieite, and don't believe in healing by the laying on of hands alone. I'm a commonsense Christian, and believe in combining just ordinary hoss sense with religion. That's why I follow the laying on of hands with a good dose of salts."

A veterinary surgeon would probably say that when the horse is bled the blood runs into the stomach and rouses the hot worms to gluttony. Then they die in their wantonness and the salts do the rest.—Magazine Section, *New York World*, Sunday, July 25, 1909.

## VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

| Name of Organization.                                   | Date of Next Meeting.             | Place of Meeting.           | Name and Address Secretary.                         |
|---------------------------------------------------------|-----------------------------------|-----------------------------|-----------------------------------------------------|
| Alumni Ass'n, N. Y.-A. V. C.....                        | .....                             | 141 W. 54th St.             | L. L. Glynn, N. Y. City.                            |
| American V. M. Ass'n.....                               | Sept. 7-10, 1909.                 | Chicago.....                | R. P. Lyman, Hartford, Conn.                        |
| Arkansas Veterinary Ass'n.....                          | .....                             | .....                       | Horace E. Rice, Little Rock.                        |
| Ass'n Médecine Veterinaire Française "Laval".....       | 1st and 3d Thur. of each month    | Lec. Room, Laval Un'y, Mon. | J. P. A. Houde, Montreal.                           |
| B. A. I. Vet. In. A., Chicago.....                      | 2d Fri. ea. mo.                   | Chicago.....                | D. D. Tierney, Chicago, Ill.                        |
| California State V. M. Ass'n.....                       | .....                             | San Francisco.              | J. J. Hogarty, Oakland.                             |
| Central Canada V. Ass'n.....                            | .....                             | Ottawa.....                 | A. E. James, Ottawa.                                |
| Chicago Veterinary Society.....                         | 2d Tues. ea. mo.                  | Chicago.....                | J. M. Parks, Chicago.                               |
| Colorado State V. M. Ass'n.....                         | .....                             | Denver.....                 | M. J. Woodliffe, Denver.                            |
| Connecticut V. M. Ass'n.....                            | .....                             | New Haven.....              | B. K. Dow, Willimantic.                             |
| Genesee Valley V. M. Ass'n.....                         | 2d wk. in Jan., '10.              | Rochester.....              | J. H. Taylor, Henrietta.                            |
| Georgia State V. M. A.....                              | Nov. 16-17, 1909.                 | Athens.....                 | P. F. Bahnsen, Americus.                            |
| Hamilton Co. (Ohio) V. A.....                           | .....                             | .....                       | Louis P. Cook, Cincinnati.                          |
| Illinois State V. M. Ass'n.....                         | .....                             | Bloomington.....            | J. H. Crawford, Harvard.                            |
| Illinois V. M. and Surg. A.....                         | Jan. and Aug.                     | Louisville.....             | W. A. Swain, Mt. Pulaski.                           |
| Indiana Veterinary Association.....                     | January, 1910                     | Indianapolis.....           | E. M. Bronson, Indianapolis.                        |
| Iowa Veterinary Ass'n.....                              | .....                             | Ft. Dodge.....              | H. C. Simpson, Denison.                             |
| Kansas State V. M. Ass'n.....                           | Jan. 4-5, 1910.                   | Manhattan.....              | B. Rogers, Manhattan.                               |
| Kentucky V. M. Ass'n.....                               | Monthly.....                      | Not decided                 | D. A. Piatt, Lexington.                             |
| Keystone V. M. Ass'n.....                               | .....                             | Philadelphia.....           | S. Lockett, Glenolden.                              |
| Louisiana State V. M. Ass'n.....                        | .....                             | .....                       | E. P. Flower, Baton Rouge.                          |
| Maine Vet. Med. Ass'n.....                              | Oct. 13, 1909.                    | Waterville.....             | A. Joly, Waterville.                                |
| Maryland State Vet. Society.....                        | .....                             | Baltimore.....              | H. H. Counselman, Sec'y.                            |
| Massachusetts Vet. Ass'n.....                           | Monthly.....                      | Boston.....                 | Wm. T. White, Newtonville.                          |
| Michigan State V. M. Ass'n.....                         | Jan. 25-26, 1910.                 | Saginaw.....                | Judson Black, Richmond.                             |
| Minnesota State V. M. Ass'n.....                        | .....                             | Stillwater.....             | G. Ed. Leech, Winona.                               |
| Mississippi State V. M. Ass'n.....                      | .....                             | .....                       | J. C. Robert, Agricultural Col.                     |
| Missouri Valley V. Ass'n.....                           | February, 1910.                   | Kansas City.....            | B. F. Kaupp, Fort Collins, Colo.                    |
| Missouri Vet. Med. Ass'n.....                           | .....                             | St. Joseph.....             | F. F. Brown, Kansas City.                           |
| Montana State V. M. A.....                              | .....                             | Helena.....                 | W. S. Swank, Miles City.                            |
| Nebraska V. M. Ass'n.....                               | .....                             | Grand Island.....           | H. Jensen, Weeping Water.                           |
| New York S. V. M. Soc'y.....                            | .....                             | Ithaca.....                 | J. F. De Vine, Goshen.                              |
| North Carolina V. M. Ass'n.....                         | .....                             | Wilmington.....             | Adam Fisher, Charlotte.                             |
| North Dakota V. M. Ass'n.....                           | Call of Sec'y.....                | Fargo.....                  | C. H. Martin, Valley City.                          |
| Ohio State V. M. Ass'n.....                             | .....                             | Columbus.....               | Sidney D. Myers, Wilmington.                        |
| Ohio Soc. of Comparative Med.....                       | Annually.....                     | Up'r Sandusky               | F. F. Sheets, Van Wert, Ohio.                       |
| Oklahoma V. M. Ass'n.....                               | .....                             | .....                       | W. H. Martin, El Reno.                              |
| Ontario Vet. Ass'n.....                                 | .....                             | .....                       | C. H. Sweetapple, Toronto.                          |
| Passaic Co. V. M. Ass'n.....                            | Call of Chair.....                | Paterson, N. J.             | H. K. Berry, Paterson, N. J.                        |
| Pennsylvania State V. M. A.....                         | Sept.....                         | Philadelphia.....           | F. H. Schneider, Philadelphia.                      |
| Philippine V. M. A.....                                 | .....                             | .....                       | Chas. G. Thomson, Manila.                           |
| Province of Quebec V. M. A.....                         | .....                             | Mon. and Que.               | Gustave Boyer, Rigaud, P. Q.                        |
| Rhode Island V. M. Ass'n.....                           | Jan. and June.....                | Providence.....             | J. S. Pollard, Providence.                          |
| St. Louis Soc. of Vet. Inspectors.....                  | 1st Wed. fol. the 2d Sun. ea. mo. | St. Louis.....              | Wm. T. Conway, St. Louis, Mo.                       |
| Schuylkill Valley V. M. A.....                          | Dec. 15, 1909.....                | Reading.....                | W. G. Huyett, Wernersville.                         |
| Soc. Vet. Alumni Univ. Penn.....                        | .....                             | Philadelphia.....           | B. T. Woodward, Wash'n, D. C.                       |
| South Dakota V. M. A.....                               | July, 1910.....                   | Sioux Falls.....            | J. A. Graham, Sioux Falls.                          |
| Southern Auxiliary of California State V. M. Ass'n..... | Jan. Apl. Jy. Oct.                | Los Angeles.....            | J. A. Edmonds, Los Angeles.                         |
| So. St. Joseph Ass'n of Vet. Insp.....                  | 4th Tues. ea. mo.                 | 407 Ill. Ave.....           | H. R. Collins, So. St. Joseph.                      |
| Texas V. M. Ass'n.....                                  | Call Exec. Com.                   | .....                       | R. P. Marsteller, College Sta.                      |
| Twin City V. M. Ass'n.....                              | 2d Thu. ea. mo.                   | St. P.-Minneap              | S. H. Ward, St. Paul, Minn.                         |
| Vermont Vet. Med. Ass'n.....                            | Jan. 19th, 1910.....              | White Riv. Jc.              | F. W. Chamberlain, Burlington.                      |
| Veterinary Ass'n of Alberta.....                        | .....                             | .....                       | C. H. H. Sweetapple, For. Saskatchewan, Alta., Can. |
| Vet. Ass'n Dist. of Columbia.....                       | 3d Wed. ea. mo.....               | 514—9th St., N. W.....      | M. Page Smith, Wash., D. C.                         |
| Vet. Ass'n of Manitoba.....                             | Not stated.....                   | Winnipeg.....               | F. Torrance, Winnipeg.                              |
| Vet. Med. Ass'n of N. J.....                            | Jan. 13, 1910.....                | Jersey City.....            | W. Herbert Lowe, Paterson.                          |
| V. M. Ass'n, New York City.....                         | 1st Wed. ea. mo.                  | 141 W. 54th St.             | W. Reid Blair, N. Y. City.                          |
| Veterinary Practitioners' Club.....                     | Monthly.....                      | Jersey City.....            | A. F. Mount, Jersey City.                           |
| Virginia State V. M. Ass'n.....                         | .....                             | Hampton.....                | W. G. Chrisman, Charlo'sv'le.                       |
| Washington State Col. V. M. A.....                      | 1st & 3d Fri. Eve.                | Pullman.....                | R. G. McAlister, Pullman.                           |
| Washington State V. M. A.....                           | .....                             | Seattle.....                | J. T. Seely, Seattle.                               |
| Western Penn. V. M. Ass'n.....                          | 1st Wed. ea. mo.                  | Pittsburgh.....             | F. Weitzell, Allegheny.                             |
| Wisconsin Soc. Vet. Grad.....                           | .....                             | Grand Rapids.....           | J. P. West, Madison.                                |
| York Co. (Pa.) V. M. A.....                             | Sept. 7, 1909.....                | York, Pa.....               | E. S. Bausticker, York, Pa.                         |

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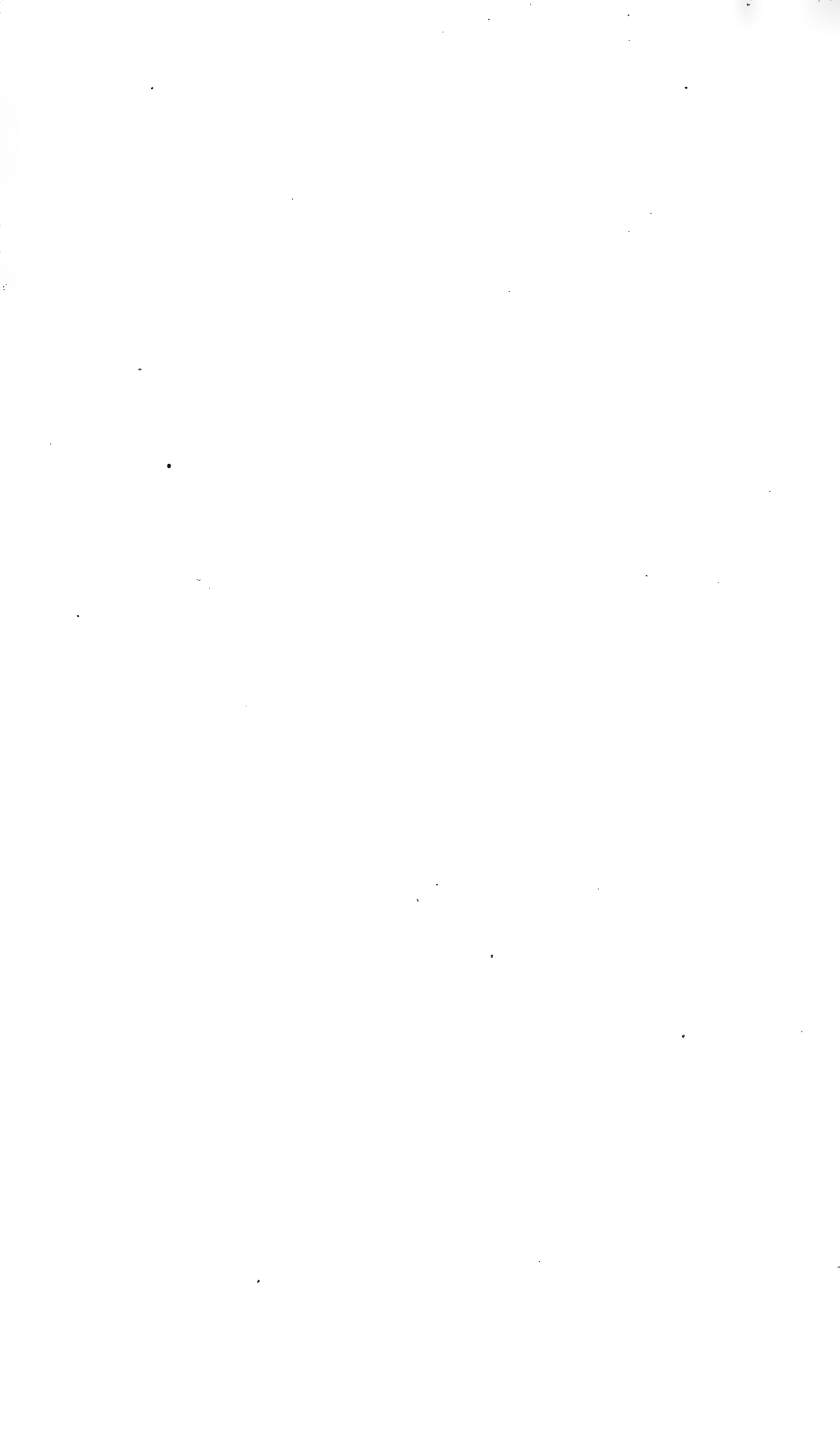
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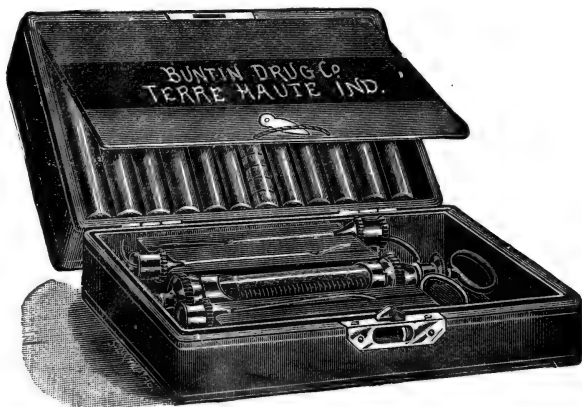
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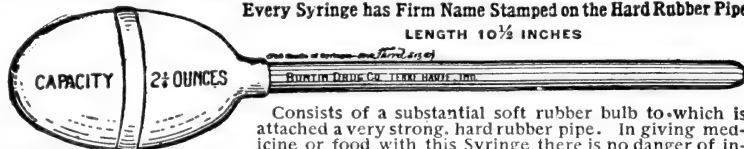
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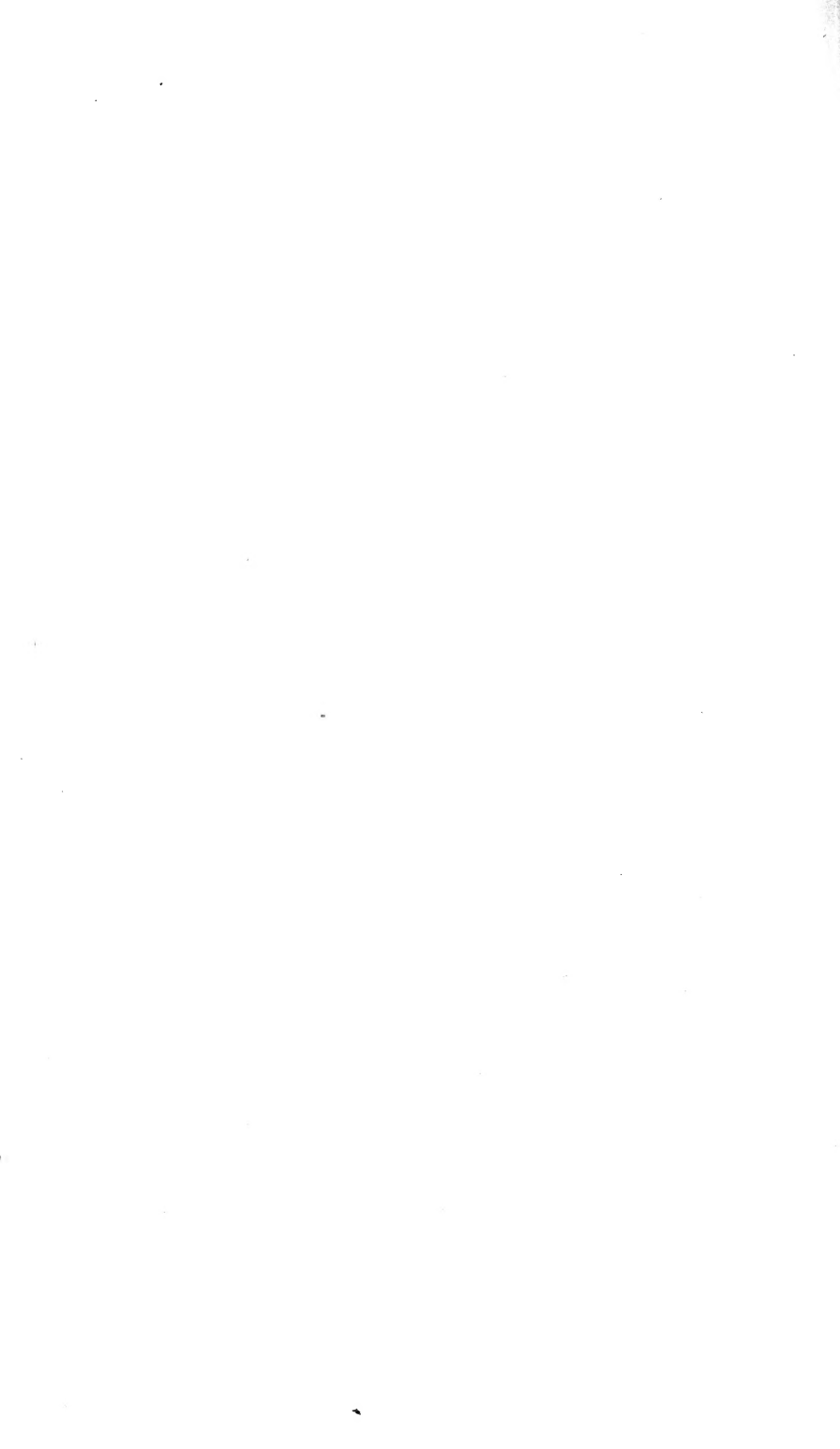
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